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ABSTRACT

This report, which summarizes a series of studies conducted to ascertain the extent to which visually impaired persons use the programs of the Library of Congress National Library Service for the Blind and Physically Handicapped (NLS), explains the survey methodology used and presents an overview of findings concerning characteristics, activities, and needs of people with limitations in reading print; the prevalence of people with print limitations; reading habits of people with print limitations; awareness and use of the NLS; satisfaction with the NLS program; the role of health care institutions in satisfying the reading needs of residents with print limitations; and organizational issues bearing on the provision of NLS services. One hundred references are listed. An abbreviated version of this report is available as ED 197 750. (FM)

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READING WITH PRINT LIMITATIONS

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EXECUTIVE SUMMARY

ED201341

Volume 1

From the series "A Survey to Determine the Extent of the Eligible User Population Not Currently Being Served or Not Aware of the Programs of the Library of Congress, National Library Service for the Blind and Physically Handicapped," Volumes 1-5.

Prepared for the National Library Service.

Marvin Berkowitz, Lorraine G. Hiatt, Pamela deToledo, John Shapiro, Margery Lurie

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Research Volumes in This Series:

Volume 1 - Executive Summary—Reading with Print Limitations
Volume 2 - Characteristics, Activities and Needs of People with Limitations in Reading Print
Volume 3 - The Role of Health Care Institutions in Satisfying the Reading Needs of Residents with Print Limitations
Volume 4 - Current Issues in Library Services for People with Limitations in Reading Print
Volume 5 - Design and Execution of a Study of Reading with Print Limitations

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The study was conceived in response to the need voiced by concerned individuals at many levels for documented data on the prevalence and characteristics of persons eligible for the alternative reading services provided by the NLS. The NLS, which is administered by the Library of Congress, enthusiastically sought monies to research this issue. We wish to acknowledge the continual support throughout our contract of Mr. Frank Kurt Cylke, Director of the NLS, and especially Mr. Richard Evensen, our project liaison officer at the NLS. Their careful review of the entire study process and the various drafts of this manuscript has resulted in what we hope will be a more useful report.

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OVERVIEW OF FINDINGS

ABSTRACT

Over three million Americans ages six years and older who reside in private households and health care institutions are either unable to read or use regular print or have difficulty in doing so. Approximately 12% of the target household population and two to four percent of the target institutional population are currently using the Talking Book and Braille Program of the National Library Service (NLS).* Another three percent of the target household population formerly used NLS materials but stopped over a year ago. Awareness of the NLS program is about 57% in the target households and even higher--86%--among institutional staff. About 25% of the non-user group expressed considerable interest in trying the present program and there appears to be considerable potential to expand use of the program among non-users who are not presently interested in trying the program by enhancing still further various aspects of the program.

HOUSEHOLD POPULATION

Size and Demographic Characteristics of the Household Target Population

Of the 2.64 million Americans in the target population who live in private households, 46% have limitations of a single type--either visual, physical or learning--and 54% have multiple reading limitations, or limitations of several types. The great majority of persons with print limitations (83%) are vision impaired. In contrast to the general population where only 11% or so of the population is 65 years or older, about 47% of the potential users of the Talking Book and Braille Program fall within this age bracket. Among the elderly, visual limitations associated with the aging process are the primary obstacles to reading regular print. Additionally, 26% of the target population is hard of hearing--an impairment that may restrict their ability to listen comfortably to Talking Books--and nearly 75% have at least one serious chronic health condition in addition to their limitations in reading print that may affect their ability to write away for materials, use a telephone, collect or send off books through the mail, operate the record and cassette players or to read for more than a few minutes without fatigue.

Apart from these limitations, the target population living in private households is remarkably similar to the national population; for each age group, the two populations exhibit many of the same social and demographic characteristics. The primary exception to this is in the area of attained education--the adult target population is considerably less well-educated than the adult population at large--but it is an exception that may have profound implications for this special population's receptivity to and interest in the National Library Service program. As in the general population, interest in reading and level of reading activity are most highly associated with educational attainment. The prevalence rate for print limitations is 12 per 1,000 persons nationally, with only minor regional variations.

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*The acronym "NLS" is used here and throughout this volume to designate the federal agency, located in Washington, D.C., which coordinates the cooperative network of libraries serving the blind and physically handicapped.

We found that the target population could not be readily summed up by sweeping generalizations: individual behavior and accomplishments among persons with print limitations are as varied as those found in the general population. Persons with severe print limitations are found in every conceivable occupation and participate in a broad range of hobbies and leisure activities, including watching television to the same extent as the general public. Similarly, their reading interests are as diverse as those of persons without reading limitations, and follow along the same lines as the general population.

Extent of Reading and Use of Reading Media

We found that about 75% of the persons with print limitations did some kind of reading in the month prior to our study; 95% of the adults in the general population are reported to have read in the past month. Since only 12% of the target population are using NLS materials (though 20% use any kind of library), many persons who are potentially eligible for the NLS program are reading materials obtained from other sources. Of the persons with print limitations who read, slightly more than half read regular print most frequently, in spite of their visual limitations and/or limitations in holding books, turning pages, sitting up, remembering or concentrating, or in reading for more than a few minutes without fatigue. The second most popular way of reading, being read to by another person, is most popular among 19% of the persons who read, followed by recordings which are used most often by 15% of those who read, and large print which is used most often by 14%. Braille is used most often by only two percent of the persons who read. Overall, there appears to be upwards of 60,000 persons (and perhaps as many as 100,000 based on this study and other recent independent findings) who use braille for one purpose or another: in contrast, about 20,000 of the persons who use braille are current users of NLS braille books and magazines. The number of NLS braille magazine and book readers has been fairly constant since 1975: almost all of these persons are legally blind. Statistics from independent studies indicate a trend of declining braille use among legally blind school children. The low level of braille book and magazine readership relative to the number of potential braille users among the severely visually impaired (with the exception of the congenitally blind and adventitiously blind professionals, who appear to be inveterate braille users), combined with the high production costs and low availability of timely braille materials, strongly argue for greater funding of innovative methods of producing and teaching braille, and the development of new administrative mechanisms to enhance teaching methods in the public schools and rehabilitation agencies.

Awareness and Use of the NLS

The utilization rate of the NLS among persons in the household target population--12%--is roughly comparable to the rates of use for the other organized helping services we studied; visiting nurses and rehabilitation home teachers, vocational training, counselling, recreational services, transportation services and help with housework were all used to just about the same extent. Interestingly, as many as three-quarters of the NLS users are legally blind, while only about 20% of the visually impaired non-users have obtained such certification. These findings suggest that there is a strong association between certification and readiness to accept and utilize special reading services, and also between getting certified and becoming aware of or being referred to special compensatory programs.

Characteristics of Users and Non-Users of the NLS

We found that a higher proportion of the current NLS users are young, white, relatively well-educated and work in white collar professions than are non-users. In addition, a larger proportion of the NLS users were accustomed to using libraries

prior to the onset of their reading limitations than were non-users. Perhaps one of the most significant findings about the NLS users is that although many of them have serious reading limitations, 19% read regular print and 16% read large print in addition to reading recorded and/or braille materials; over 70% of the non-users read print. About half of the persons in both groups use another person to read to them sometimes. Current users were also found to read more heavily (i.e., to spend more time reading) than non-users and to be more independent readers: to illustrate, only 13% of the NLS users had someone else read to them as their primary reading medium, compared to 21% of the non-users. Likewise, non-users were found to get more help than users in selecting and obtaining reading materials. This is not surprising in light of the fact that current users also tend to be healthier, more mobile and to have fewer specific reading limitations than non-users.

Reasons for Non-Use of the NLS, the Potential for and Obstacles to Expansion

The most frequently offered reasons for not using the NLS program were: lack of interest in reading generally and in print alternatives, not enough time, and health and disability conditions that were felt to be either too severe or not severe enough to merit going to the trouble of establishing one's eligibility for the program and obtaining and learning to operate the NLS equipment and materials.

Taking a conservative estimate, one-quarter of the non-user population expressed a significant interest in the Talking Book and Braille program. Since nearly 90% of the target population is not currently using the program, a substantial expansion appears to be possible.

The greatest interest in trying the program was voiced by the parents of children with dyslexia and other learning problems, who tend to be less aware of the program, and whose eligibility for it falls under the NLS rubric of "reading limitations stemming from 'organic dysfunctions,'" the causes of which are often difficult to assess clinically. It would seem that expanding the eligibility criteria for the current services provided by the NLS to cover all persons who might benefit from the program, whatever the source of their disorder, would not substantially outstrip the present capacity of the NLS, since the great majority of persons in the target population who are able to read regular print prefer to do so than to utilize alternatives to print. For example, only one percent of the current users of the NLS have only learning limitations; hence, this population is not likely to make much use of the current program. Blacks, we found, also have a strong interest in trying the program, though they tend to be less familiar with it than whites. Many persons with primarily physical limitations in reading and older persons who have non-reading physical problems in addition to their visual limitations also expressed an interest in the NLS program, but persons in these groups frequently indicated that they were unable to operate the record or cassette players by themselves.

These findings suggest that if the NLS wishes to attract the largest segment of non-users who now use print alternatives to a limited degree, they will have to modify their equipment so it is simpler to comprehend, easier to operate and generally more responsive to the needs of the elderly, the frail and the multiply impaired. Similarly, a greater number of high interest/low vocabulary level reading materials and shorter length reading materials may attract more of the current non-users--whose educational attainments are generally lower than those of users, and whose health is often poorer-- to the program. Current users called for an expansion of the number and variety of selections, particularly non-fiction, informational materials and professional and research materials. The latter informational materials might also increase the interest in the NLS program among persons

whose reading needs exceed the recreational materials presently emphasized by the NLS. Evidently, these informational needs are not presently being adequately or conveniently served by the many sources of print alternatives other than the NLS. Perhaps enhanced cooperation between the NLS and the growing number of radio reading services that primarily read local newspapers and magazines over communication sidebands of FM radio stations will satisfy some of the needs for timely informational materials. The current users have also expressed an interest in lighter, smaller and more portable cassette and record players, and ones that have better tone quality for extended listening, and are compatible with hearing aids. Older NLS users frequently indicated that the NLS four track cassette players are especially difficult and frustrating to use. It appears that the complexity of the four track cassettes in some cases threatens their self-confidence and lessens their interest in the program.

In addition to low awareness, and the physical inability to effectively utilize the present NLS services independently, another factor which may help to explain the high degree of non-use of the program among persons who are potentially eligible for it is the lingering image of the NLS as a program for the blind. The persistence of this image is apparent from the fact, noted above, that over 75% of the NLS users are legally blind, compared to about 20% of the non-users. The other side of the coin is that only two percent of the users do not have vision impairments. It appears, then, that an even more vigorous campaign than the one already underway may be necessary to convince persons with physical limitations in reading that Talking Books are indeed intended for them as well as the visually impaired. At present, active rehabilitation agencies for the blind and established and vocal advocacy groups of and for the blind are two of the major sources of referral to the Talking Book and Braille program. Unfortunately, there is not a comparable network of organizations for the physically handicapped and the learning disabled which refer eligible persons in these categories to the NLS at present. Hence, the awareness and utilization rates for these two groups are somewhat lower. Our survey of national organizations for the physically handicapped indicated a low awareness of the need among these persons for print alternatives.

The NLS and public libraries are currently used by less than two percent of the target population to obtain information relating to their special needs. In light of this, the NLS may want to expand its current efforts to promote the information and referral services of the network libraries.

Although as many as 45% of the non-users of the NLS program reported, upon hearing a description of it, that they could not foresee any particular problems with using the program or any reasons why they would not want to try it, there does appear to be considerable reluctance among persons with print limitations to accept their need for alternatives to regular print. This reluctance is evident from the fact that so many of the potential and current NLS users utilize regular print--even if with difficulty--or readers more frequently than any other reading medium.

We found that the majority of persons who seek out print alternatives do so within the first five years of onset of their print limitations, and that if they are not motivated to seek them out and use them then, they tend not to use them at all. This finding underscores how crucial it is that persons with limitations be referred to the appropriate agencies soon after onset. Less than a quarter of the target population have received rehabilitation services to help them adjust to and compensate for their reading limitations.

According to our findings, there is no single mode of outreach that is likely to be significantly more successful than any other in increasing the awareness of the NLS among potential users. Slightly less than 40% of the respondents who were aware of the program first heard of it by word of mouth (i.e., from other persons) and of those, slightly more than a third learned from someone who had personal experience with the program; about 25% first learned from a public service announcement on TV or radio or from an article in a newspaper or magazine; and the remaining 35-40% first learned from such sources as special schools or classes, rehabilitation programs, clubs and organizations, health services and libraries. These data suggest that a broad-based outreach and public education program employing radio, television, newspapers and magazines which is aimed at the general public is necessary to attract a substantial number of new users. (The NLS has initiated such a program and we encourage its expansion and evaluation.) The health care profession, in spite of its current poor track record in the area of referrals, appears to be in an ideal position to reach and refer many potential subscribers to the NLS, since as much as half of the target population had a medical examination or received some form of medical treatment in the month prior to when we conducted our survey: we would hope that the NLS may find a way to mobilize this source of referrals.

POTENTIAL FOR UTILIZATION OF THE TALKING BOOK PROGRAM IN HEALTH CARE INSTITUTIONS

Virtually all of the above points are borne out by our study of residents in the nation's 30,000 hospitals, nursing homes and special schools for the blind and physically handicapped. About two million persons reside in these institutions. Here, the populations tend to be older, more frail and to have more than one impairment restricting their ability to read print. The utilization rates of the NLS among institutionalized persons are rather low: two to four percent of the residents read with recordings, though probably as many as 50% of the residents would qualify for the program. Eighty-six percent of the institutions surveyed were aware of the Talking Book and Braille program, though most intitutional staff, like most persons in the general population who are aware of the program, view the NLS as a program for the totally blind, and do not encourage its use among persons with low vision or other reading limitations.

The low utilization rates found in health care residences and hospitals are directly associated with the observed or expressed disinterest on the part of institutional administrators and staff members in providing for and encouraging reading opportunities. The administration of the Talking Book program in institutions is usually performed by activity directors, social service staff or volunteers who are responsible for arranging for the provision of printed reading materials. We found that if an institution did not make current print materials widely available it was not more likely to encourage the use of print alternatives, which generally require even more staff involvement: many institutionalized persons (about 50%) who might benefit from print alternatives were reported by staff to be unable to obtain access to or to operate the NLS equipment independently. Another facet of the current lack of interest among staff in fostering the use of print alternatives or reading generally is that reading is largely an individual or private activity (though, of course, it might be done as a group), and as such is usually regarded as an asocial activity, while activity directors tend to be more concerned with promoting group activities that will foster social interaction. This is one of the reasons why Talking Books scored lower than television on every criterion of utility posed to staff in our study, with the notable exception of providing intellectual stimulation.

Two factors which were found to be integrally linked to the success of NLS services in health care institutions were: the existence of a program champion on the institution's staff who actively encourages the use of Talking Books, and some organizational arrangements within the institution to systematically order books and magazines from the regional library, distribute them and operate the equipment. In the absence of these two components, more pressing institutional activities, for which the institution obtains third party reimbursement, consume staff time and attention.

The data suggest that there is much room for NLS regional and sub-regional librarians to expand institutional use of the Talking Book and Braille program, but that such an undertaking will require innovative techniques, such as the development of volunteer and self-help/mutual aid programs, regular personal contact and the continual training and encouragement of institutional staff. High staff turnover, especially of nurses aides, volunteers and activity staff, who have the major operating responsibility for interacting with residents, thwarts the success of one-time orientation and training of staff members about the NLS. The development of self-help groups among residents may be one means of achieving a bit more continuity, which is essential to the successful introduction of Talking Books into institutions, as well as of providing a positive opportunity to utilize more fully the abilities of the more able-bodied residents.

CONCERNS OF REGIONAL LIBRARIANS

According to our in-depth interviews with locally funded and administered regional librarians, many of the librarians are already well aware of a good many of the above points. We found that the major concerns of these libraries and the wide differences in success rates, as measured by utilization and circulation rates, followed from the basic organization, funding, staffing and orientation of the libraries. The libraries themselves were seen to fall into three categories: 1) healthy units that provided an innovative set of programs including active outreach; 2) fiscally, administratively and philosophically more restrained units that focused on expanding their collections, converting to cassette players, obtaining more space, and providing basic reader services; and 3) libraries whose fiscal outlook was poor and that were struggling to maintain themselves. Whereas the federal commitment to the NLS program was about $100 per year per user, the state and local commitment was about $40 per year per user. Of course, the state and local commitment is substantially multiplied by the participation of local volunteers.

The recruitment and management of volunteers was problematic for some of the libraries and flowed easily for others: success in this area seems to be a key to providing many ancillary services such as customized recording and transcription of texts, duplication, regular outreach to nursing homes, hospitals and schools, and active reader advisor programs. Toll free telephone services that enable readers to call in any requests or queries they may have are expanding and appear to be a most effective means of maintaining close contact with subscribers. An issue which merits careful review is the question of whether large print books and magazines ought to be prepared at federal expense, since these materials are both in short supply and great demand by the target population. We would hope that these materials might be supplied by the NLS, but with no reduction of the funds allocated to Braille and Talking Books.

Although automation is now being employed in some states to facilitate the maintenance of profiles on reader's interests and personal characteristics and usage statistics, the accurate reporting of readership presented a problem for many librarians. Findings from our studies indicate that there is some confusion about NLS terminology and approaches to measuring use of the program. For example, the term "readership" in ordinary usage connotes individual subscription, whereas the NLS defines it to include use of the different media it provides to a given subscriber: one person may read Braille and Talking Book records, but NLS readership figures would indicate a count of two (2), reflecting the use of two different NLS media. Additionally, the term "deposit collection" is used variously by different institutions, resulting in some confusion as to which institutional NLS users are deposit collection users and which are individual users who reside in institutions but order and manage their own reading materials from NLS.* NLS also assumes that there is an average of ten institutional readers per NLS deposit collection, but our findings indicate that in most health care institutions (excluding schools for the blind), there are only two to four users per collection.

The growth of subregional libraries in many states is adding responsibilities to the traditional function of the regional library as a source of reading materials to include coordination and support for the more local distribution centers; this has given rise to growing and transitional pains for some of the libraries. Overall, the findings from the interviews with librarians indicate the benefits that might accrue from the adoption of standards for service among the cooperating NLS libraries. We are pleased, therefore, to see that such standards, initiated by the NLS, have recently been prepared by a special subcommittee of the American Library Association, and hope that these will soon become an integral part of the NLS program.

*We use the term "deposit collection users" to denote those persons who share between them the reading materials and equipment provided by the NLS to an institution for use by more than a single NLS subscriber.

EXECUTIVE SUMMARY--READING WITH PRINT LIMITATIONS

INTRODUCTION

OBJECTIVES

In order to gauge the total federal resources that might appropriately be committed to the National Library Service for the Blind and Physically Handicapped and to assess how well it was meeting its legislative mandate to provide alternatives to regular print for all who need them, the NLS needed to know the size of the population with limitations in reading or using regular print. The NLS wanted to understand more fully the social and demographic characteristics and the reading habits of the population potentially eligible for its services and to determine the ways in which eligible non-users of the program differ from current subscribers. With this information, the NLS might better assess the effectiveness of its current programs and make changes to improve its services and to reach new subscribers. Mindful of the large number of Americans who reside in acute and long-term health care institutions and attend special schools, the NLS also wished to explore the actual and potential utilization of its services in these facilities, and to understand better the institutional factors governing the use of alternative reading media to regular print.

One main charge for this study, then, was to produce a statistical profile of the population (including persons residing both in private households and health care institutions) that might make use of alternative reading media to regular print, or, as we refer to them, "print alternatives." The term "print alternatives" includes such media as: large print, recordings, braille, another person and radio broadcasts of written materials.

In addition to describing the potentially eligible population, we also thought it would be useful to identify the structural and programmatic elements of the NLS which affect the utilization rates and to make recommendations to the NLS, in the hopes ultimately of inducing non-readers to become readers and readers to read more.

To attain the above goals, the Library of Congress, which administers the NLS, contracted with the American Foundation for the Blind (AFB) to conduct the study described in this report. The study includes the following research activities during 1977-78:

1. The identification of 7586 persons six years or older, with reading limitations in some 214,177 randomly selected households possessing telephones in the continental U.S.A.;

2. In-depth telephone interviews with a stratified random sample of 2041 persons from among those identified in the household screenings;

3. A mail survey of 1,660 randomly selected nursing homes, hospitals, schools and other residential health care institutions;

4. Site visits to 48 representative health care institutions across the country to examine more closely factors considered significant in the institutional mail survey;

5. In-depth telephone interviews in 16 representative states with librarians who are responsible for the distribution of alternatives to regular print and the provision of other library services.

Each of these components is treated as a sub-study which contributes to the "big picture" and is taken up in a separate volume as follows:

Volume 1 - Executive Summary

Volume 2 - Characteristics, Activities and Needs of People with Limitations in Reading Print

Volume 3 - The Role of Health Care Institutions in Satisfying the Reading Needs of Residents with Print Limitations

Volume 4 - Current Issues in Library Services for People with Limitations in Reading Print

Volume 5 - Design and Execution of a Study of Reading with Print Limitations

The findings of all of the sub-studies overlap and reinforce one another, culminating in some general conclusions and implications. The data are intended for use in policy analysis, planning and administration.

APPLICABILITY OF THE FINDINGS

One of the key determinants of the utilization of print alternatives is their accessibility. In the United States, there are presently several hundred organizations that prepare and distribute print alternatives, although only a handful of these organizations are major suppliers of alternate media to print. The NLS is the principal source of non-educational recorded and braille books and magazines. (In Volume 2 we list a great number of these organizations.) Although the major producers of braille and recorded materials are non-profit organizations which receive tax support, some commercial organizations also provide print alternatives, as do a number of church and voluntary organizations. Some of these organizations provide either braille or recorded versions of printed materials in response to special requests; the Braille Institute and Recordings for the Blind are two such organizations.

Public Law 89-522 provides the legal mandate under which the NLS now operates. It authorizes the establishment of a decentralized library system coordinated by the federal unit in Washington, D.C., and a network of regional and subregional libraries distributed throughout 48 of the states, the District of Columbia, Puerto Rico and the Virgin Islands. The federal unit sets policy, including standards of eligibility, selects and arranges for the preparation of materials and equipment, coordinates interlibrary exchanges, performs research and necessary administrative services, provides bibliographic assistance, and offers reference services. This unit is funded entirely by the federal government. During the period of this study (1977-1979) the federal monies increased by nearly 50%; in FY 1979, $34 million in federal monies were allocated to the NLS. This represents currently an average of about $100 per current user of the National Library Service. The 1979 budget included the prepara-

tion of about 1,000 copies each of some 1,700 recorded titles, the preparation of 84 copies each of nearly 400 press braille titles, and the purchase of more than 160,000 new record and cassette players. The 159 "regional" and "subregional" libraries in the NLS network assess the eligibility of particular individuals for the service, distribute materials supplied by the NLS and others produced by themselves to eligible subscribers, and administratively operate the program for their geographic areas. In the fiscal year 1978, state funding accounted for some 67% of the $14 million dollar operating budget of the regional and subregional libraries. Federal monies from arms of the national government other than the Library of Congress, such as the Library Services Construction Act (LSCA), the Comprehensive Employment and Training Act (CETA), and the Social Security Act, provided 19%, city and county funds made up about 10%, gifts and bequests added four percent, and other sources supplied less than one percent. Generally, one library is selected in each state as a regional library; however, in two states there is presently no regional library, and in five others there are two regional libraries. Additionally, any local public library or other organization serving more than 200 readers may apply to the state regional library to become a subregional library for residents in its surrounding area (usually counties). As of September 1979, 103 subregional libraries had been established in 22 states.

An estimated 14 million NLS books, magazines and music scores were circulated in 1978: 78% were records, 18% were cassettes and four percent were in braille. Thirty-six percent of the recorded materials were magazines distributed on flexible discs: reflecting the expansion in the distribution of cassette players and Talking Book cassettes, use of this medium increased by 49% between 1977 and 1978. Braille utilization was also augmented by about seven percent, mainly as a result of the increase in the number of braille magazines distributed. Use of Talking Books on hard discs remained about the same during this period. Circulation to individual subscribers from regional libraries makes up about 60% of the total national reading. Circulation of magazines on flexible discs or braille direct from the producer (to reduce delays) accounts for about 36% of the reading. Additional magazines, produced by sources other than the NLS, are also distributed by the regional and subregional libraries themselves. Through the use of special arrangements, many of these magazines are distributed in braille or recorded form at the same time that they are made available to the general public. Circulation to mini-libraries in agencies and institutions (deposit collections) accounts for three percent and interlibrary loans make up one percent.

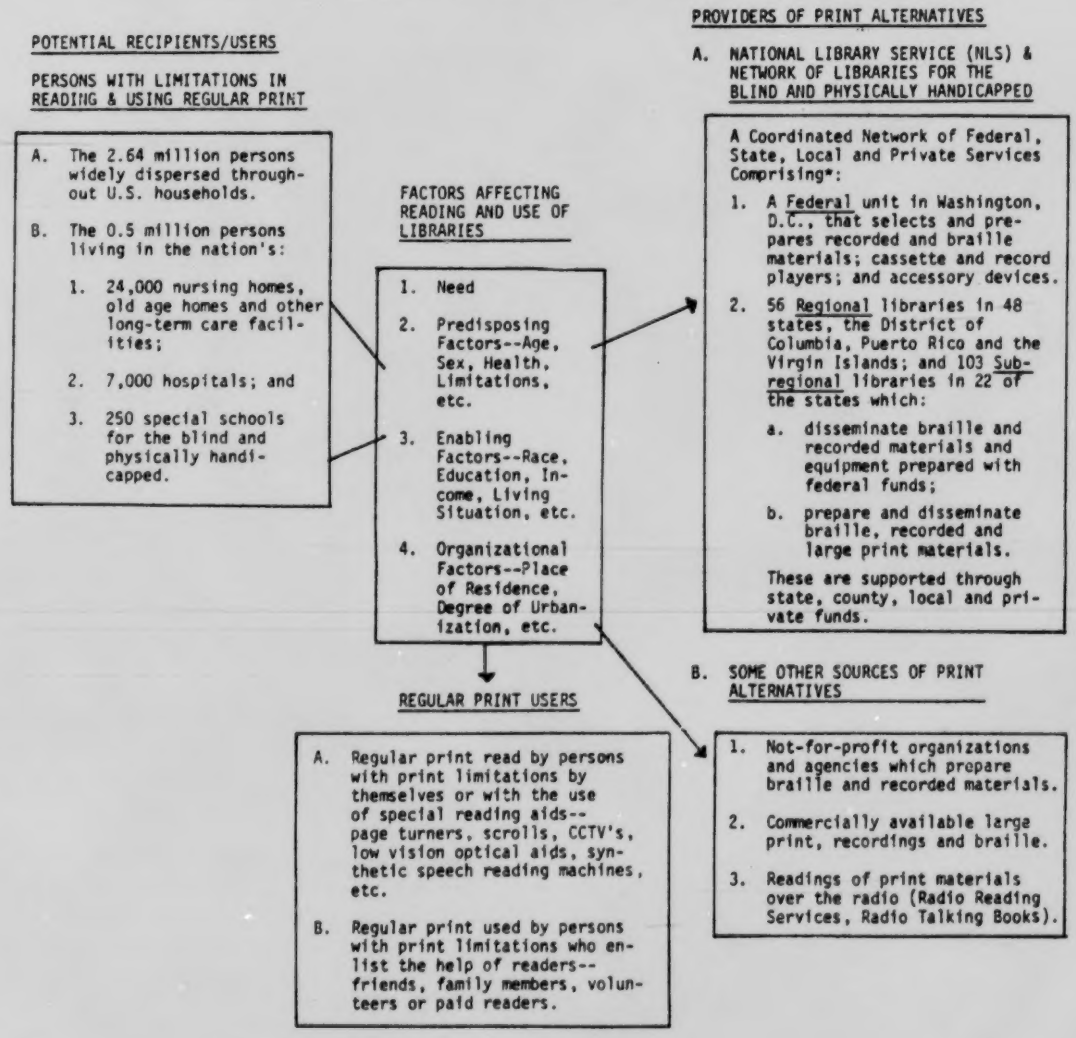
In addition to the more traditional alternatives to regular print--braille and talking books--the 1970's have seen a substantial growth in the availability of new types of print alternatives. Two of the most promising innovations are the development of local radio reading services, which make current books, newspapers and magazines available to listeners, and the development of computerized machines which read printed materials aloud in synthetic speech. With the growth of technology, new ideas for viable alternatives to print and for improvements in the production of old ones are emerging at a steady pace, and should be expected to continue into the 1980's.

It should be clear from the foregoing that although we were particularly concerned with that population that might utilize the print alternatives prepared and distributed by the NLS, many of the findings have broad rehabilitation implications. In the Executive Summary, we have restricted ourselves to those

issues which have implications for the NLS, but the other volumes of the report cover a much wider range of topics related to the social lives of the study respondents. Figure 1 below shows the input of the NLS and some other providers of print alternatives.

Figure 1

Relation Between Potential Users of Print Alternatives, Factors Affecting Use and Providers of Print Alternatives


POTENTIAL RECIPIENTS/USERS
PERSONS WITH LIMITATIONS IN READING & USING REGULAR PRINT
A. The 2.64 million persons widely dispersed throughout U.S. households.
B. The 0.5 million persons living in the nation's:
1. 24,000 nursing homes, old age homes and other long-term care facilities;
2. 7,000 hospitals; and
3. 250 special schools for the blind and physically handicapped.
FACTORS AFFECTING READING AND USE OF LIBRARIES
1. Need
2. Predisposing Factors--Age, Sex, Health, Limitations, etc.
3. Enabling Factors--Race, Education, Income, Living Situation, etc.
4. Organizational Factors--Place of Residence, Degree of Urbanization, etc.
PROVIDERS OF PRINT ALTERNATIVES
A. NATIONAL LIBRARY SERVICE (NLS) & NETWORK OF LIBRARIES FOR THE BLIND AND PHYSICALLY HANDICAPPED
A Coordinated Network of Federal, State, Local and Private Services Comprising*:
1. A Federal unit in Washington, D.C., that selects and prepares recorded and braille materials; cassette and record players; and accessory devices.
2. 56 Regional libraries in 48 states, the District of Columbia, Puerto Rico and the Virgin Islands; and 103 Sub-regional libraries in 22 of the states which:
a. disseminate braille and recorded materials and equipment prepared with federal funds;
b. prepare and disseminate braille, recorded and large print materials.
These are supported through state, county, local and private funds.
B. SOME OTHER SOURCES OF PRINT ALTERNATIVES
1. Not-for-profit organizations and agencies which prepare braille and recorded materials.
2. Commercially available large print, recordings and braille.
3. Readings of print materials over the radio (Radio Reading Services, Radio Talking Books).
REGULAR PRINT USERS
A. Regular print read by persons with print limitations by themselves or with the use of special reading aids--page turners, scrolls, CCTV's, low vision optical aids, synthetic speech reading machines, etc.
B. Regular print used by persons with print limitations who enlist the help of readers--friends, family members, volunteers or paid readers.

* These figures were correct as of September 1979.

READING AS A PROCESS

In contrast to most research on reading habits, which is restricted to a study of the cognitive aspects of reading, this study emphasizes the importance of the context in which reading occurs, the purposes for which reading is performed, and the physical capacities required to utilize effectively the various reading media. We conceived of reading as a process, or an ordered sequence of steps. An individual first develops a reason to read, then seeks out and obtains materials, and then operates on the reading medium. Finally, the absorbed mater-

ial is utilized or shared with others, either immediately or after a period of storage and absorption in the mind. We analyzed the reading process into eight distinct conceptual components: motivation; awareness; accessibility; selection; operation/control; endurance; learning/comprehension; and sharing/utilization. Each of these components is discussed briefly in relation to the NLS.

Motivation--Motivation is a basic determinant of all purposeful activity. To seek out and utilize compensatory rehabilitation programs, to learn to read and write without sight or dexterity and to operate either record or cassette players or master the braille code and its use requires a positive attitude and a willingness to utilize one's remaining physical capacities to achieve desired ends. The ability to focus one's attention and to tolerate frustration and anxiety, and to persevere in learning to read with print alternatives would all be impossible without the concomitant motivation to achieve some end.

Some findings from our survey reflect the importance of motivation for use of the NLS program: 57% of the respondents who gave reasons for not using the program said that the main reason for not using it was "no interest or not enough time." Other reasons given were: "condition is not bad enough/program is only for blind persons" (29%); "condition is too bad" (10%); "too old" (5%); and problems with components of the Talking Book and Braille program" (4%).

An important issue which bears on the motivation to find out about and utilize print alternatives is the extent to which people are willing to identify themselves, or be identified as blind, disabled or otherwise physically impaired. We found that often people are reluctant to be identified in terms of their limitations, even though such identification may be required in order to become eligible for special services. To avoid being labelled as "handicapped" an individual may choose to suffer what might appear to be far greater losses.*

Some hints as to the seriousness of this source of exclusion emerge from an examination of the data we gathered on the relation of "total blindness" to "legal blindness." Roughly 20% of the population with no light perception whatsoever (estimated as 105,000 persons by us) had not sought medical certification to be identified as legally blind (estimated as 483,000 persons) which would have made them eligible for such benefits as special tax exemptions and supplemental social security income. In our sample also only 35% of those "unable to see regular print" had sought certification of legal blindness.

The implication of self-exclusion for the National Library Service, which requires certification of condition, is clear. People may not make use of the service if they feel it requires them to identify with limitations they have not fully accepted. It is our observation that individuals wish to have minimal attention drawn to their limitations or special needs. Hence, the road to use of the NLS might be made easier if the NLS modifies or discards certain terminology and formal names that are often construed negatively by the potential recipients

*The population that has limitations in using print materials is becoming known in the field of concerned professionals as the "print handicapped." Our preference is to reserve the term "handicap" for situations where physical impairments interact with the environment in such a way as to result in greater difficulties in performing social roles for persons who have functional limitations than for those who do not. Mindful of the current usage, we are introducing the terms "print limitations" and "print disability" which we feel to be less pejorative.

of services, such as "blind" and "physically handicapped." One possibility might be to rename the regional and subregional libraries something like "Libraries for Braille and Talking Book Users," without specifically referring to the physical limitations of the users.

Awareness--Familiarity with what materials are available, where they can be obtained and at what costs or efforts, are all crucial issues in the utilization of print alternatives, and in the process of reading generally: only with such knowledge is a genuine choice possible. Happily, the NLS appears to be doing a good job of disseminating information about the program since, according to our findings, 60% of the target population are aware of the program.

Accessibility--Accessibility has two facets: one of which pertains to the physical abilities of the individual to get from place to place (to sit up, to get out of bed, to go to the mail box, etc.) to explore reading options; the other of which involves the availability of the desired reading materials and the ease of obtaining them. The second facet, then, has organizational aspects which are beyond the reader's control.

Unlike users of regular reading services for whom the proximity of the library is a factor in utilization, the subscribers to the National Library Service rarely visit any of the 159 regional or subregional libraries. Library visits are unnecessary because the NLS mails all reading materials directly to subscribers' homes at no cost to the user.* Our survey of regional libraries, discussed in Volume 4, found that subscriber visits averaged only one per day. Therefore, in place of the usual factors of travel distance or hours of services affecting accessibility, we have emphasized factors related to the effectiveness of the NLS libraries in filling requests, and the ease and timeliness of obtaining and returning materials through the mail.

Selection--By "selection," we mean the act of choosing reading materials. This seemingly simple act has two distinct components: one is the input component--i.e. obtaining information about the potential reading choices; and the other is the output mechanism--i.e., conveying one's choice of reading materials to either a distributor of print alternatives directly, or to another individual who will actually obtain the desired reading materials.

But to mention only the input and output functions leaves out the crucial step between those two functions, that of actually making a choice. The ability to make a good choice is also dependent upon both internal and external factors; the internal have to do with one's ability to assimilate material and to perceive and discriminate between different options, and the external are those again over which the individual with print limitations has little or no control, such as the adequacy of the descriptions of available materials--for example, those provided in the bimonthly publications Talking Book Topics and the Braille Book Review regarding the reading materials prepared and distributed by the NLS.

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*Materials are shipped "free matter for the blind and physically handicapped" to and from subscribers. This free postal service was subsidized by Congress in FY 1979 to the extent of $9.5 million, and the monies for this service appear to be increasing. Nevertheless, "free matter" is recognized as having a low mail priority and timely mail deliveries are a serious problem according to our respondents.

The selection process is dependent then on a wide range of faculties, both physical and mental. If one has a hearing, seeing or learning limitation, several avenues of obtaining information (i.e., listening to a friend, advertisement or perusing a magazine) required to make one's choices are immediately closed. Similarly, speech, dexterity, health and mobility limitations may affect one's ability to perform one or more of the possible output functions (i.e., filling out an order form, dialing a telephone). Roughly 20% of the adult respondents (16 years or older) in our household survey were reported to be unable to use a telephone independently; these persons would obviously be unable to avail themselves of the toll free telephone services now made available by 46 of the regional and subregional libraries. Looked at the other way, however, 80% of the adults could use the toll free numbers, as could the family members of persons themselves unable to order over the telephone.

Operation/Control--The most crucial component of the reading process for our purposes in this study and the one which is most commonly taken for granted in studies of reading, is the operation/control component. By "operation/control" we mean the ability to successfully operate or utilize at least one of the various ways to read i.e., another person, records, cassettes, braille, large print or regular print.

The physical abilities to utilize the medium (or media) in which the reading materials are presented fall into four general categories: gross and fine motor abilities, seeing and hearing abilities. Gross motor abilities include such things as: sitting up to read, having the strength and sensitivity in one's arms to hold a book, turn pages, etc. "Fine motor ability" designates the ability to perform specific operations such as turning a switch, pushing a button, and placing the arm of a needle on a record; these motor abilities are essentially arm, elbow, wrist and hand functions. Motor abilities might at first blush appear to be less crucial to the successful utilization of print alternatives than seeing and hearing abilities, yet when we examine the operation component of the reading process, it becomes clear that whatever alternative to regular print one elects to read with, one will need either some motor abilities to manipulate the medium in question, or the assistance of another person.

Endurance--By "endurance" we mean the physical stamina to perform any of the operations of reading for more than a few minutes without discomfort, pain or fatigue. The inability to sustain any given activity (e.g., turning pages or sitting up to read) for a substantial length of time without discomfort is likely to reduce one's motivation to read, because meaningful reading generally takes time. The individual who cannot read for more than a few minutes at a time may be hard put to find adequate reading materials and so seek other means of fulfilling his/her needs.

Learning/Comprehension--This component designates the intellectual and cognitive capacities required to read, such as following a line of reasoning, assimilating and retaining material, and finally, maintaining one's interest or concentration level. Vague as this definition is, we mean to capture by it such abilities as acquiring and assimilating a wide range of cultural information, the most crucial of which for linguistic purposes generally is the use of concepts, and the ability to translate visual or auditory stimuli (marks and symbols) into meaningful concepts.

The degree of concentration required to utilize alternatives to regular print successfully would seem to vary with both the media used to read, and the particular abilities of each reader. One blind person, for example, may find it very difficult to absorb material by listening while another may have more difficulty receiving tactual stimuli and translating them into words and ideas.

Sharing/Utilization--There are essentially two reasons for reading, instrumental reasons--to obtain information and carry out work, school and daily living responsibilities--and expressive reasons--to derive pleasure. Regardless of which purpose one has, the reading experience is likely to be more rewarding if one has the opportunity to communicate what one has read to others, and so integrate that experience into the rest of one's life. Thus, sharing/utilizing reading materials closes the feedback loop, taking us back to the first component of the reading process, the motivation to read.

Our findings show that discussing, or otherwise utilizing what one has read with others is associated with higher levels of reading. As significant, therefore, as the effects of reading limitations on the preceding components of the reading process are their effects on one's ability to convey one's ideas and impressions to others. We found that many persons with impairments in the receptive elements of seeing print, and/or the sensory processes of hearing recorded versions of books or tactually reading braille are also prone to limitations in the expressive activities of writing, talking and non-verbal communication. Obviously, each attendant impediment may inhibit one's ability to share the reading experience.

METHODOLOGY

The definition of terms used and the methods by which the data were collected, analyzed and projected to the nation are detailed in Volume 5. Throughout this report the percentages have been rounded and the totals may therefore be slightly more or less than 100%.

Readers are cautioned that some results are based on projections of data about characteristics of relatively rare incidence (e.g., use of braille) among a population of rare incidence (slightly more than 1 in 100) and may, therefore, have a margin of error for some issues ranging from five to twenty percentage points. Hence, it is best to view the findings as estimates within a broad range.

HOUSEHOLD STUDY

The overall household study was designed as a two-stage sampling process. In the first phase, conducted during 1977, a representative national sample consisting of 214,177 households with listed telephone numbers (screening over 650,000 persons) were asked questions about their ability to read and use regular print materials. Results of these interviews provided data on which to project the size of the national and regional population with reading limitations and to prepare other global measures such as prevalence and prevalence rates in relation to a few key predisposing, disability and community factors. The responses to the Phase 1 survey were also used to develop a sample of the target population who could be reinterviewed at a later date.

The sample selected from the screenings was stratified by primary reading limitation (seeing, physical, learning), age group and region. All persons with primary physical and learning problems identified in the screenings and about one-third of those with primary problems in seeing were included in the sample. Some 2,041 "callback" telephone interviews lasting one and a half hours on average were conducted with this sample. The results were then weighted back to the proportions found in

the screenings. The basic weighted sample size was 7,321 which consisted of 7,585 persons identified in the screenings, less about 250 respondents who refused to describe the specific nature of their limitations and indicated that they did not want to be called back.

INSTITUTIONAL STUDY

Two sources of data were used in the study of health care institutions conducted in 1978: mail questionnaires and field visits. The mail survey was directed to staff in a random sample of 4,000 of the nation's 30,000 nursing homes, hospitals and special schools. One in each eight facilities was selected as in a systematic sample, and the selection criteria included sponsorship, size and state wide distribution. Nursing homes and special schools were selected from the 1975 Master Facility Inventory of the National Center for Health Statistics. Hospitals were selected from the 1977 Directory of U.S. Hospitals prepared by the American Hospital Association. Responses were received from 1,660 institutions after two mail follow-ups and selected telephone follow-ups. In addition, one-day site visits to a representative sample of 48 institutions in seven geographically dispersed states were made. Information was obtained both by direct observation and from guided as well as unstructured interviews with staff members and residents.

LIBRARIAN STUDY

The study of issues of concern to the cooperating network of state and local libraries for the blind and physically handicapped is based upon telephone interviews with regional librarians in 16 representative states. The initial interviews lasted about two and a half hours and were followed up with requests for specific budget and organizational information. An extensive review of the published literature and internal NLS materials was also performed for this study.

ISSUES, FINDINGS AND IMPLICATIONS

The main body of the remainder of this report is presented as a series of issues, findings and implications for the NLS. At the outset, though, we present a few general considerations to be kept in mind in the discussion that follows. First, the impact of a print limitation on a person's reading behavior appears to be highly individualistic, because it is determined in large part by factors having nothing to do with the limitation itself, such as an individual's social role, responsibilities to others, living situation, support system, economic situation and motivation. Each of these factors varies so much from individual to individual that there would seem to be no precise way of predicting whether any given individual is likely to be able to use print alternatives successfully, or even whether he/she will be motivated to seek them out.

Similarly, we found it futile to try to correlate the effects of particular disorders with specific types of reading limitations, since these interactions depend on both the extent and severity of the disorder, and on whether the disorder exists in isolation or in combination with other disorders.

And finally, in all of our studies, basically, we use data collected at one point in time to make general statements about the relationships between a broad variety of factors (demographic, social, economic, cultural, community and organizational) and reading behavior. One example of such a general statement is: "Health care facilities with strong rehabilitation orientations encourage reading with print alternatives more frequently than those more focused on acute care." A major limitation of this approach, and hence, this study, is that it did not allow us to examine fully the process by which people decide, if indeed they consciously decide at all, to use or not use a given service. Such an in-depth assessment of the individual motivations for using print alternatives might be useful. Performing case studies in individual homes where the actual setting for reading could be assessed, might be the best means of obtaining this information. The case studies of health care institutions derived from our site visits, which are offered in Volume 3, are models of this kind of analysis.

CHARACTERISTICS, ACTIVITIES AND NEEDS OF PEOPLE WITH LIMITATIONS IN READING PRINT IN THE HOUSEHOLD POPULATION

PREVALENCE OF PERSONS WITH PRINT LIMITATIONS

Issue: WHAT IS THE SIZE OF THE POPULATION WITH PRINT LIMITATIONS IN THE GENERAL HOUSEHOLD POPULATION?

Findings: Approximately 2.64 million Americans six years or older who live in households were estimated to have either permanent or temporary limitations in reading regular print materials. These prevalence data result in a prevalence rate of about 12 per 1,000 persons. The incidence of persons with new print limitations is about 100,000 persons annually.

About three persons out of every 1,000 households interviewed reported the presence of at least one family member, six years or older, with limitations in using regular print materials. In about 7% of the households, two or more persons had limitations in reading print.

Implications: Overall, print limitations affect only a small portion of the American population. It would seem, therefore, that the government should be able to provide funding adequate to the reading needs of this population.

Issue: WHAT IS THE PREVALENCE OF PARTICULAR LIMITATIONS IN READING REGULAR PRINT?
WHAT IS THE SEVERITY OF THOSE LIMITATIONS?

Findings:

I. OPERATION/CONTROL OF THE READING MEDIA

Limitations in Seeing: In terms of prevalence, limitations in seeing well enough to read regular print (**even with their** usual optical correction) dominate all other reading limitations. Though seeing is not the most serious limitation for everyone, nearly five-sixths (83%) of the household sample identified as having print limitations--about 1.8 million persons--have trouble seeing to read. Nearly half (47%) of the sample reported that they were unable to see well enough to read regular print even while using eyeglasses; 39% said that they had serious difficulty doing so. Eighty-six percent of the persons certified as "legally blind" reported that they were unable to see regular print; 14% have serious difficulty doing so. About 89% of the population can discriminate colors; therefore designing NLS equipment with color control buttons and slides is useful.

Limitations in Manual Dexterity/Motor Control (Holding Reading Materials, Turning Pages): Limitations in manual dexterity were also reported frequently: eight percent were unable to hold a book or magazine; 11% had serious difficulty doing so; seven percent were unable to turn pages; and nine percent had serious difficulty.

Although 59% can independently operate all four common information entertainment receivers--radio, TV, record and cassette players--and 77% can use three out of four (usually excluding cassette players), five percent were "physically unable to operate totally by themselves" any of these appliances, four percent can use only one (usually radio), and another 14% can use only two. Specifically, eight percent say that they cannot operate a radio or television in their homes; 24% cannot operate a record player; and 37% reported that they cannot operate a cassette player.

Consequently, a substantial portion of the NLS target population is cut off from mass media for entertainment and information, as well as from the use of print, without the help of others.

Limitations in Sitting Up: In our sample, six percent of the respondents were unable to sit up to read; and another six percent had serious difficulty doing so. Of course it may be possible to read while lying down, but doing so would not seem to facilitate reading for any length of time.

II. ENDURANCE

Significantly, 36% of the sample reported that they were unable to read regular print for more than a few minutes without weakness or fatigue; another 10% indicated that they had difficulty doing so.

III. LEARNING/COMPREHENSION

Impairments in learning or comprehension were reported by 35% of the sample. The greatest percentage of problems were in: Perception, e.g., reversing letters or words, following a line (22%); Memory, Confusion and Attention Span, (7%); and

Mental Retardation and Slow Learning (5%). Eleven percent of the sample were reported to have two or more specific learning limitations. Half of those who reported having learning problems indicated that they have difficulty following instructions that have several steps.

IV. MULTIPLICITY AND SEVERITY OF LIMITATION

Since so many individuals reported multiple reading limitations, a variety of formats were explored in order to present, in a relatively simple fashion, an overall portrait of the total set of reading limitations affecting individuals. The format for analyzing limitation typologies that we found most useful distinguished persons with limitations of only a single type (46%) from those with limitations of several different types (54%). In this format, we considered limitations in manual dexterity, motor control, sitting up and endurance as "physical" limitations.* The classification of each new limitation type and its frequency is given below in Figure 2.

Figure 2

Distribution of Persons with Reading Limitations by Limitation Typology

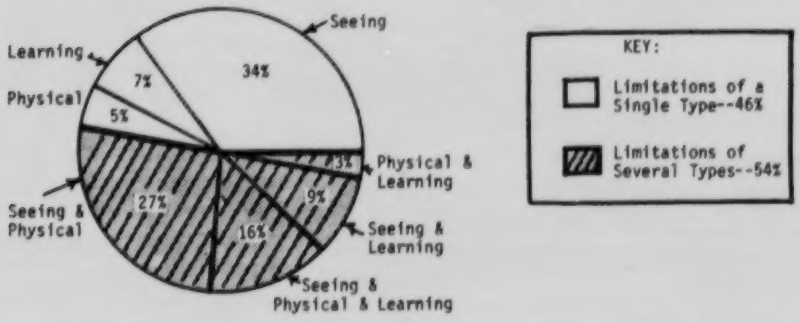


Table 1, on the following page, shows how the seven-category distribution of reading limitations relates to the severity of those limitations.

Another approach employed to simplify the findings was to analyze for each individual the composite of all reading limitations according to gradations of severity, but without regard to the specific type of limitation. In this process, we examined whether the respondent reported being completely unable to perform a reading function or could do the function, but only with difficulty. (Learning/comprehension limitations were designated as difficulties, since the severity of the impairments was unknown.) The severity rating system resulted in four classifications. These four categories and their relative frequencies are seen in Figure 3.

*A person might have two or more different limitations of the physical type--e.g., turning pages and weakness. He/she would be categorized under the single limitation of physical in the above system.

Table 1

Distribution of Persons Who Are Unable to Read Print or Have Multiple Learning Limitations by Type of Limitation and Severity

Limitation Typology	Estimated Prevalence 1000's**	Total Percent	Percent Unable to: See	Hold a Book	Turn a Page	Sit Up	Read for More than a Few Minutes	Percent Having Multiple Learning Limitations*
Limitations of a Single Type								
Seeing	884	100	56	-	-	-	-	-
Learning	183	100	-	-	-	-	-	51
Physical	131	100	-	29	25	11	53	-
Limitations of Several Types								
Seeing & Physical	709	100	61	13	12	13	74	-
Seeing, Physical & Learning	419	100	49	16	13	12	71	22
Seeing & Learning	236	100	45	-	-	-	-	26
Physical & Learning	78	100	-	10	15	6	69	64
Total	2640	100	47	8	7	6	36	32

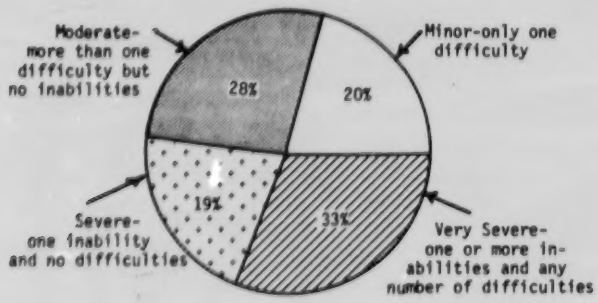
*Learning/Comprehension limitations were designated as difficulties since the severity of these impairments was unknown.

**Weighted Sample Size = 7231. In order to maximize the statistically usable information about components of our target population, non-proportional stratified sampling was used and then these data were weighted back to proportions identified in the screening interviews. See Volume 5 for details.

Using the system of classification given below in Figure 3, almost all (99%) of those classified as "severe" had the single limitation of being unable to see regular print; 74% of those classified as "minor" had the single limitation of having difficulty seeing regular print. A word of warning is in order here: this system was devised strictly in order to faciliatate analysis of the data; the terms, as we have defined them, do not have the same meanings they do in ordinary English. Hence, one should not assume, for example, that a "minor" limitation in reading regular print means that the person does not have a serious reading limitation. To the contrary, all persons included in the survey were considered to have serious reading limitations.

Figure 3

Distribution of Persons with Reading Limitations by Severity of Limitations


Moderate- more than one difficulty but no inabilities
28%
Minor-only one difficulty
20%
19%
Severe- one inability and no difficulties
33%
Very Severe- one or more inabilities and any number of difficulties

Issue: WHAT OTHER PHYSICAL LIMITATIONS RESTRICT READING? HOW PREVALENT ARE THESE COMPOUNDING LIMITATIONS?

Findings:

COMPOUNDING LIMITATIONS--In addition to their limitations in reading print, over three-quarters of the respondents had one or more chronic non-reading conditions, hearing loss, problems in auditory cognition (rate of absorbing speech on radio or television), mobility or general health. As many as half of our respondents had two or more additional limitations, and the percentage of persons with multiple impairments increased with age. We have labelled these additional physical problems as compounding limitations, because they may exacerbate the specific limitations identified in using print materials or may restrict reading by touch or by listening, as well as by sight.

The variety of chronic non-reading problems that were reported was extensive. Heart condition (10%), muscular/motor problems (6%), arthritis and rheumatism (6%) and diabetes (3%) were among the most frequently mentioned problems after hearing loss (26%).

The relationships between the compounding limitations and the severity of the reading limitations are shown in Table 2. Persons with severe limitations in manual dexterity and endurance tend to be subject to higher levels of mobility restrictions, more serious non-reading conditions and more general health problems than persons with severe visual limitations. Nearly a third of the visually impaired who are unable to read print need to stay in the house or in bed, but the level of confinement is twice as high for those who are unable to hold a book or to turn pages.

Table 2

Distribution of Persons with Compounding Limitations by Severity of Print Limitations

			Compounding Limitations				
Print Reading Severity Level	Weighted Sample Size*	All	Hard of Hearing	Has to Stay in House or in Bed	Health is Poor	Can Operate Only Two of Record Player, Cassette Player, TV or Radio	Speed of Speech on Radio and TV is too Fast
			Percent of Persons at Severity Level				
Minor	(1445)	20	20	7	5	8	13
Moderate	(2006)	28	26	16	12	18	16
Severe	(1300)	19	25	19	9	18	12
Very Severe	(2400)	33	30	40	26	38	18
Total	(7151)	100	26	23	15	23	15

*Weighted sample size varies slightly for each of the compounding limitations.

HEARING AND AUDITORY COGNITION--A quarter (25%) of the respondents are hard of hearing, although only one percent are totally deaf. Hearing deficits affect persons who have limitations in seeing, manual dexterity and endurance about equally. Persons with learning limitations, many of whom are children, are slightly less

prone to hearing loss. Related to the ability to hear is the ability to absorb speech: 15% of the respondents reported that the speed of speech on radio and TV is too fast for them, indicating the importance of providing controls to slow down the speed of speech and pitch controls.

One clear implication of these findings is that many persons may not be able to make maximal use of recorded books and magazines unless they are properly amplified or appropriate hearing aids or headphones are used to compensate for correctable deficits in audition, and speech and pitch controls are incorporated for listeners who need to slow down recordings to understand them. The NLS is, of course, aware of these issues and has taken measures to accommodate the needs of persons with hearing limitations.

MOBILITY--Our survey findings relating to mobility reveal that about half of the sample population, as seen below, is unable to get about with ease.

Mobility Status	Percentage
Has to stay in bed all or most of the time	5%
Has to stay in the house all or most of the time, but not in bed	17%
Needs a travel aid and/or person to get about but does not have to stay in the house	19%
Needs assistance of another person to get about, but does not have to stay in the house	16%*
Needs assistance of a special aid, such as a long cane, walker, wheel chair or guide dog, but does not have to stay in the house	16%*
Has some difficulty in getting about by oneself, but does not use a travel aid or person to help	9%
Has no difficulty in getting about by oneself	50%

Overall, about 25% of the respondents utilize some kind of travel aid to get about, and of these persons, about 60% also report needing the assistance of another person. It is evident, then, that most persons in this population could not readily get to a bookshop or a library independently should they want to. On the other hand, these data dramatize the point that most persons with sight loss do have partial vision, at least enough to travel, and do not use travel aids. Our findings are consistent with other studies of the disabled which indicate that help in travel is one of their greatest needs.

GENERAL HEALTH--Half of the sample rate themselves as being in "good health," a third report that their health is only "fair," and one-sixth think that their health is "poor." Only 51% of those confined to their beds say their health is poor; this suggests a serious underestimation of health among the other 49%, given the fact that this population is largely elderly and does not suffer primarily from orthopedic impairments.

*Not mutually exclusive.

Implications: Most persons who have limitations in reading regular print were found to suffer from two or more severe impairments affecting their overall functional capacity. The pattern of multiple impairment found in this study, and previously reported for the general household population of disabled persons in the United States, has significant implications for the NLS. It means that in order for special library programs to reach a large segment of the eligible non-user population, they must be designed and organized to compensate not only for the physical problems that directly limit reading regular print, but also for a set of compounding limitations that restrict reading with print alternatives as well. A substantial percent of the population cannot see regular print either very well or at all, often lack the manual dexterity to manipulate records or record player arms, do not have the strength to press buttons or turn knobs requiring usual energy requirements, may not have the capacity to follow directions of usual complexity, or the attention span and energy to use or absorb reading materials for more than a few minutes at a time.

Issue: WHAT PORTION OF THE PRINT-LIMITED POPULATION HAVE PERMANENT LIMITATIONS?

Findings: Eighty-seven percent of the persons who reported having reading limitations indicated that they were "permanent." Reported permanency was highest among the persons indicating dexterity, motor and/or weakness limitations (93%), and the lowest among persons with learning difficulties (77%). Temporary limitations were most prevalent in the youngest age group. Some 31% of persons in the ages 6-16 reported temporary limitations compared to about 10% in the older age groups. Males and females seem equally likely to report permanent limitations.

Implications: It would seem that the duration of functional limitations is an important determinant of whether an individual will seek out and utilize alternatives to regular print. The some 13% of the target population having temporary limitations, although eligible for the National Library Service, are less likely to be aware of this program and, if aware of it, are less likely to feel themselves sufficiently impaired to invest time in applying and waiting for recorded or large print materials. Braille requires special training over an extended period, and consequently, would rarely be useful. These persons also have the expectation or hope of getting better, and not requiring special materials.

Issue: WHAT SOCIAL, DEMOGRAPHIC AND ATTITUDINAL FACTORS CHARACTERIZE PERSONS WITH PRINT LIMITATIONS?

Findings:

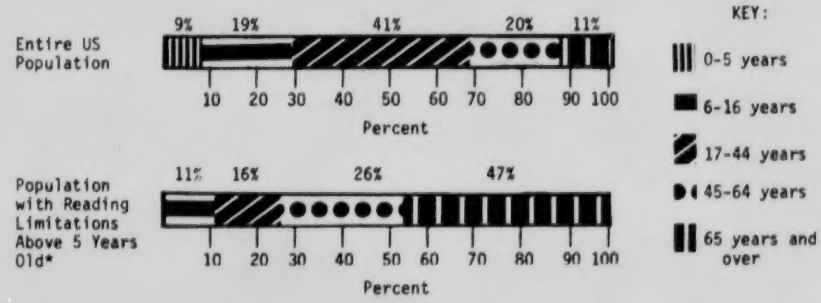
DEMOGRAPHIC FACTORS

AGE--Age and sex are primary determinants of community and household roles. Age is also a significant determinant of chronic health conditions and physical limitations, such as visual impairment, and hence, of the ability to read print. We see, for example, in Figure 4, that persons with print limitations are on average much older than the population at large. The average age of this special population is 56 years old. Half of the population is above 61 years of age, 25% is under age 40, and 25% is above 75. For the U.S. population as a whole, half of the population is above 27 years and only 25% is above 50 years of age.

Sixteen percent of the population with print limitations suffered congenital (age 0-1) reading limitations, three percent observed onset during the ages of 1-5, 12% experienced onset between the ages of 6-16 years, 15% between the ages of 17-44, 26% developed limitations between the ages of 45 and 64, and 27% experienced onset after age 65.

Figure 4

Age Distribution of Persons with Limitations in Reading Regular Print Compared to Age Distribution of the U.S.A. - 1977



*In considering the population with reading limitations, we have excluded persons under six years of age, because persons generally do not begin to read before the age of six.

Elderly persons (over 65 years of age) prevail especially among those persons who are "unable" to perform the activities of seeing regular print, holding books, turning pages or sitting up, as opposed to those who merely report difficulties performing such activities.

On a biological basis alone, age and sex are predisposing factors affecting the frequency of print limitations, the amount of reading one is likely to do, and the type of media preferred to do it.

Overall, 47% of the persons reporting reading limitations were 65 years of age or older: this represents an age-specific prevalence rate of 55 per 1,000 persons. The school age (6-16) group has a prevalence rate of 6 per 1,000. The working age groups (17-44 and 45-64 years) show prevalence rates of 5 per 1,000 and 16 per 1,000, respectively.

SEX--The prevalence of reading limitations is significantly greater among women than men: 59% of the persons identified as having limitations in reading regular print are women. (See Figure 5 and Table 3 below.) This finding is explained, in part, by the fact that women tend to live longer than men (average life spans of 76 years and 68 years respectively), and, as we saw above, vision and other impairments affecting reading are often concomitants of the aging process. The prevalence rate for men is 11 per 1,000, compared to 16 per 1,000 for women.

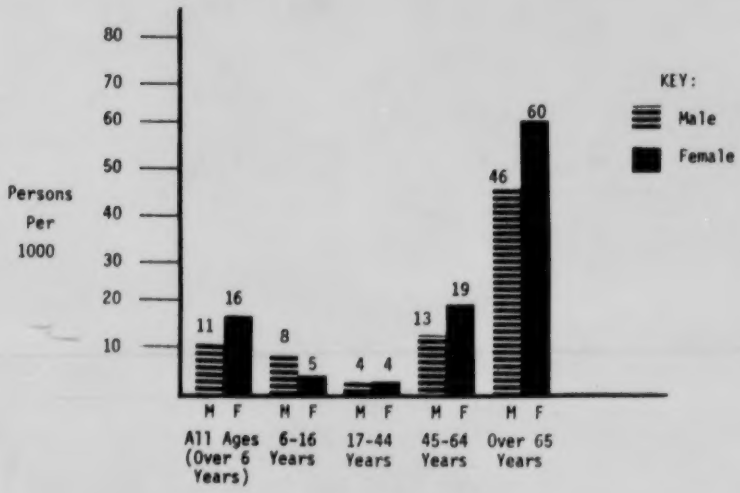
Table 3

Prevalence of Limitations in Reading Regular Print by Age and Sex U.S.A. - 1977

Age Group (years)	Male	Female	Total
	----------1000's----------		
6-16	168	98	266
17-44	194	190	384
45-64	275	434	709
65 and over	440	841	1281
All ages (6 and over)	1077	1563	2640
Sample Size	(3089)	(4497)	(7586)

Figure 5

Prevalence Rates of Limitations in
Reading Regular Print Materials by Age and Sex
U.S.A. - 1977



We found that women consistently report more physical and visual limitations of a relatively lower severity than do men. These differences in the reporting practices of men and women with reading limitations are not entirely accounted for by women being in the upper ends of the 45-64 and the 65 years-and-over age groups. One possibility is that women are more aware of physical problems in reading, and report them closer to the onset of the limitation than men. Another possibility suggested by recent researchers is that women are socialized to report ailments and seek treatment before men; in fact, when one controls the data for living arrangement, marital status, psychiatric symptoms and nurturant role obligations, the apparent sex differences disappear.

Implications: The findings on the predisposing factors of age and sex suggest that there is a need to tailor the design specifications of coordination, dexterity and strength to the abilities of a population with increasing numbers of elderly persons, many of whom have general health problems in addition to their seeing, dexterity, strength and/or hearing limitations. There is a continuing need to perform human factor studies which will result in the preparation of prototypes consistent with the physical capacity of potential readers.

Additionally, as library administrators are no doubt already well aware, in a society where the population above 65 is projected to increase by 36% over the next 20 years, it would be well-advised to plan for increased future demands--up to 3.5 million persons by the year 2000.

SOCIAL AND CULTURAL FACTORS--The individual's social position and cultural milieu and his/her family and residential setting (including institutions) are all factors which facilitate (i.e., enable or limit) reading and the use of other media and social services. The "social structural" factors are: race, occupation, education, life stage, living situation and life style. "Cultural" factors encompass elements such as: country of birth, native language and religion. The "family" factors include: income, socio-economic status, household composition, family role, social networks, family and kinship attitudes and helping arrangements. We discuss a few of the primary factors here.

RACE--The prevalence rates of reading limitations for non-whites is higher than that for whites in every age and sex group. Overall, the national prevalence rate for non-whites of 18 per 1,000 is nearly 1.5 times that for whites, and increases to nearly twice as high after age 45 years. Similar differences in rates have been observed by other researchers for inability to read newspaper print and for legal blindness.

The reading limitations of non-whites tend to be identified (onset) at a later age than those of whites: for example, in the age group 6-16 years, 64% of the limitations of whites are congenital or occur in the first year of life compared to 52% for non-whites, for whom identification appears to increase once children begin attending school. Perhaps better health care among whites is responsible for the earlier identification of disorders. Among the possible explanations of these race differences are: significantly higher rates of diagnosed diabetes and of elevated systolic blood pressure especially among non-white females which may lead to related vision disorders.

Implications: Though special outreach activities may be required to identify non-whites with print limitations, and to stimulate their interest in print alternatives, there is certainly a high potential demand for alternatives to print among non-whites.

COMMUNITY FACTORS--Region, community size and degree of urbanization or cosmopolitanism affect proximity to media, and, therefore, their accessibility to potential users of print alternatives. These community variables take into account not only the availability of home-delivered newspapers and libraries, but also the alternative sources of reading materials, such as book stores, and of potential alternatives to print, e.g., the proximity of NLS cooperating libraries and the number, and quality of reception, of radio and television channels, including radio reading services.

PLACE OF RESIDENCE--The four NLS geographical service regions are quite comparable to the U.S. Census Bureau's standard division of the country into the North East, South, North Central and West regions. According to the latter, about 64% of the U.S. population having limitations in reading regular print reside in the Southern and North Central states (see Table 4). Differences in the prevalence rates are relatively small, but nonetheless may be important to regional librarians in attempting to plan more accurately for needs in their states. The South and North Central regions have the highest prevalence rates (13 per 1,000 persons) and the North East region has the lowest prevalence rate (10 per 1,000 persons).

When the four Census regions are futher subdivided into the standard nine geographic Census areas (see Figure 6), the area with the largest potential need for alternative reading media is the East North Central region; this midwest industrial region has over half a million individuals with print limitations, and shares the highest prevalence rate of 13 persons per 1,000. The South Atlantic region also has approximately half a million persons with print limitations (prevalence rate of 12 persons per 1,000). The Mountain region has the lowest prevalence, with slightly fewer than 110,000 people with print limitations, but a similar prevalence rate of 12 per 1,000 persons. The regional age and sex distributions typically vary by only a few percentage points from the national findings.

Table 4

Regional Distribution of Persons Over Six Years of Age
With Limitations in Reading Regular Print - U.S.A. 1977

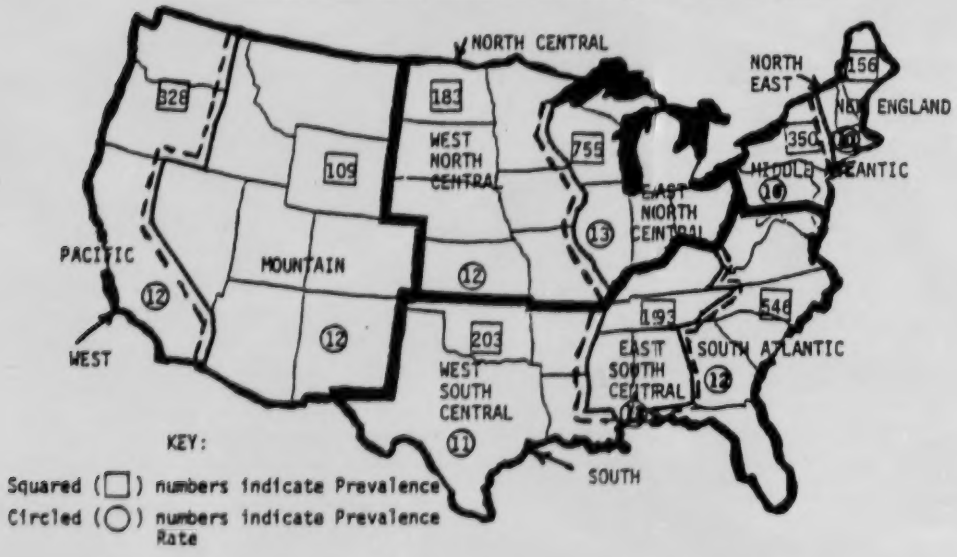
Census Region	Prevalence (Number of Persons in 1000's)	Prevalence Rate (Persons per 1000)
North East	506	10
New England	156	10
Middle Atlantic	350	10
South	942	13
South Atlantic	546	12
East South Central	193	13
West South Central	203	11
North Central	755	13
East North Central	572	13
West North Central	183	12
West	437	12
Mountain	109	12
Pacific	328	12
Total U.S.	2640	12

Sample Size = 7585

There is a consistent pattern of differences in reported limitations of all types and severity levels when one compares non-metropolitan and metropolitan areas. Even after controlling for age, the prevalence rates for persons living in non-metropolitan areas are 10%-20% higher. At present, there are no well-founded explanations for these differences. One hypothesis which though plausible does not hold up is that health care and rehabilitation services are less well used in non-metropolitan areas: the utilization rates of medical services by our respondents were found to be comparable in metropolitan and non-metropolitan areas.

Figure 6

Prevalence and Prevalence Rates of Persons Over Six Years of Age
With Limitations in Reading Regular Print by Region



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Implications: The need to provide and promote services that supply alternative reading materials to print is greater in the non-metropolitan and rural areas than in metropolitan areas, although, in absolute terms, the potential demand is higher in metropolitan areas on account of the concentration of the population.

The question of optimum location of library facilities, as with any fixed facilities, involves a variety of issues. Proximity of users to the facility, in part, ensures ease of access even for the mail service routinely offered by the National Library Service. The expansion of subregional libraries over the past ten years is thought to be associated with greater circulation rates of NLS materials in the areas of local service: greater proximity to NLS services may result in faster mail deliveries and turnaround by the same users. Hence, the expansion of subregional libraries to rural areas may be a means of responding to the relatively high needs in these areas.

LIVING ARRANGEMENTS--Our premise is that the presence of non-disabled household members who are available and willing to provide help in reading will lead to an increase in the time spent reading: hence, our interest in examining the living arrangements of respondents. Twenty-one percent of the respondents were living alone, of whom nearly 83% were female. By contrast, in 1976, 20% of all households in the United States contained only one person, 64% of those living alone were women. The higher proportion of older persons living alone in our sample (33% over the age of 64, compared to 16% in the age group 45-64 years, and 7% between 17 and 44 years) also follows the pattern for the U.S. population as a whole. Overall, persons living in different situations vary little by limitation type, except for those with learning problems: from 50%-75% of the respondents with learning limitations are children living with their parents.

Living situation does, however, seem to affect the respondents' psychological well-being and sense of security. Persons who live alone tended to report being in poorer health than those living with others, and were also more likely to report serious chronic conditions and more serious mobility and hearing limitations.

Implications: Expansion of library toll free telephone calling and referral services and awareness of these services may help both to reduce the isolation of persons who live alone, and to extend reading materials to persons who might otherwise go without them.

On the surface, the low rates of geographic mobility among persons with print limitations--with the exception of persons living in the West--suggest that it should be relatively unproblematic for the NLS, which relies largely on mail delivery, to keep track of readers. However, relocation of persons who previously lived alone and have either since moved to health care residences, in with family, have died or have begun to use or have stopped using the program undoubtedly creates serious problems in making changes of address or status. Additionally, as we shall show, approximately 20% of the NLS users have begun to use the program in the past year, making for a significant amount of record-keeping in itself. Other findings of ours show that it is often difficult to communicate with this population, because many of them are unable to use a telephone and many never become aware of their mail. This suggests that unless readers themselves or other household members take the initiative to report changes of residence and/or health status to the network library, the regional and subregional libraries may have considerable difficulty keeping track of readers. This difficulty was substantiated by our survey of librarians.

EDUCATION AND REHABILITATION--Adults aged 25 years and over who have print limitations were considerably less well-educated than persons 25 years and over in the general population. Overall, three percent of the adult respondents reported receiving no formal schooling, 38% had completed eight years of school or less, 39% had been to high school (9 to 12 years) and 18% had had one or more years of college, business, trade or vocational training after high school Three percent have gone to special and ungraded schools, which, in terms of educational level, are probably comparable to high schools.

Early onset of a reading limitation is not an insurmountable (or even a serious) obstacle to educational achievement for some, but it may nevertheless be a deterrent for others. This is apparent from the fact that a larger proportion of persons with early onset received relatively little education compared to those who experienced onset later. These data may reflect the effect of greater severity of congenital limitations, possible tracking within schools, or lowered parental expectations. The proportions of persons who went on to college were approximately the same for those with onset of disability at birth, in the first five years, or during the public school ages. To illustrate, in the age group 17-44, 26% of those with congenital onset went to college, compared to 21% with onset between the ages of one and five, and 27% with onset during the school ages of 6-16.

Of the 19% of the print-limited who are currently in school or training (385,000 persons nationally), the majority have learning problems and are living at home with their parents. Forty-two percent of those in school are attending regular schools, 17% are in special classes, 19% are in special schools for disabled persons, and 8% attend college. Another 9% are studying or training in workshops and 5% are undergoing training or rehabilitation in some other sort of facility. As might be expected, children going to special schools or classes tend to have more non-reading health-mobility problems in addition to their reading limitations (33%) than those going to public schools (17%) or college (17%). Persons with any kind of learning limitations were typically in training extending over a number of years. About 60% were in training for more than six months. Short term training of 1-2 months, or 2-6 months was much more common for the larger groups of persons with visual or physical deficits.

Of the 15% of the respondents attending school or in training, nearly a third (30%) reported receiving training in special reading techniques or in basic reading skills (i.e., phonetics, word recognition, spelling and memory exercises), 8% reported learning braille, and 5% reported learning how to use Talking Books or the Optacon.

The findings also show that many persons who presumably would benefit from rehabilitation training do not receive it. Overall, only about one-fifth of all persons interviewed had participated in training to compensate for their reading limitations or other physical problems. Slightly more than a third of those who were legally blind or totally blind reported receiving special training to compensate for their visual deficits. While this may be explained by the fact that most persons with seeing impairments are older, it is certainly not a desirable situation.

Implications: Education is a key guide to reading behavior. The fact that the NLS adult target population is considerably less well-educated than the U.S. adult population implies a relatively lower demand for reading materials. This conclusion is also borne out by the low rates of rehabilitation training among the respondents.

The long period of rehabilitation for persons with learning limitations suggests that relative to persons with other primary reading limitations: 1) the NLS has a longer period to develop awareness of its service among these persons through the formal rehabilitation network than among those with visual or physical impairments; and 2) efficient means need to be established to contact persons with seeing and dexterity limitations before they leave the formal rehabilitation network.

SOCIAL ROLE--An individual's usual activity or major social role is another extremely important variable in assessing his or her potential reading behavior. The survey findings on the respondents' usual social roles show that 40% are retired, either by choice or on account of their age or disability; 18% are going to school or are in training; 18% are not working for reasons of health or disability; 12% are working; and three percent are looking for work. The main activity of nine percent of the respondents is taking care of their homes (housekeeping).

Implications: For policy purposes, the full range of social roles, although somewhat redundant, is probably more accurate and useful than usual social roles. The more severe limitations (inabilities compared to difficulties) are associated with reduced rates of taking care of a home, going to school or working. This suggests that these persons have reduced rates of work- or school-related reading, but it also suggests that they have more time for recreational reading, such as that provided by the NLS.

LABOR FORCE PARTICIPATION/EMPLOYMENT--The labor force participation rate among 17-64 year olds is 31%. (The comparable labor force participation rate for 18-64 year olds in the country as a whole in 1977 was 62%.) This includes both persons who are working and those who are looking for work. The participation rate for women is 23%, and that for men is 42%. The rate is 41% among persons 17-44 years old, and 24% among persons 45-64 years old.

Working age adults who are unable to read regular print have a greater tendency to say that they are not working or are retired for reasons of poor health or disability than those who only have difficulty: the percentages are 51% and 38%, respectively. It is probably safe to assume that for both of these groups, many persons in fact drop out of the labor market because they are discouraged by how difficult it is to find a job.

The declining labor participation and employment rates with age suggest that job retention is extremely difficult for persons who develop reading limitations later in life, after having been employed for some time. Unemployed persons in this category tend to say that they are retired by choice or age, rather than for reasons of health. Here too, however, it is plausible to suppose that some of these persons are discouraged by the lack of job prospects, or possibly even by subtle forms of discrimination against elderly impaired persons.

Another factor which bears on the issue of labor force participation is the existence of disincentives to work like extra costs of travel or sighted readers, and the potential for disability income payments. However, poor preparation and low skills may also be problems. We found that among younger, unemployed persons (ages 17-44), where one might expect the motivation to work to be high, only 11% are receiving vocational training, and only 15% are receiving some form of counselling.

Although the labor force participation of the working age respondents is very low, the actual employment of these persons in the labor force is very high (85%). Of course, the reason for the high employment rate is that many persons simply do not enter the labor force. Of the respondents who are employed, nearly half are working at white collar jobs, a rate similar to that for all United States workers.

Thirty percent of all those employed work in the manufacturing, construction and transportation industries; 15% in sales; 19% in business; 33% in services; and 6% in other sectors. Print-limited persons appear to be working in a wide variety of occupational titles, but either at upper levels or low entry-level positions: this suggests the absence of a "working class" involving career development for disabled persons.

About three-fourths of those employed are in the 17-44 age group. The remainder are evenly split between persons 45-64 years old and those 65 and older.

Sixty-five percent of the employed respondents work full-time (35 or more hours per work). Respondents who have mobility limitations, however, are about four times less likely to be employed than their counterparts who do not have mobility restrictions, and those who are employed work significantly fewer hours. Somewhat less than half (41%) of the respondents who were employed read regularly on the job. A quarter (23%) use reading aids on the job, mostly eyeglasses (66%), magnifiers (20%) and tape recorders/players (11%). Of those who employ reading aids at work, one out of six uses another person to read to them.

Implications: The fact that the target population is employed in a broad range of industries and occupations means that reading materials in all these areas are desirable.

The challenge involved in obtaining jobs in the upper occupational strata and white collar professions was observed when we examined the educational and employment status of persons who experienced reading limitations in early life. It appears that these persons attend school longer than their peers in the general population, perhaps to help them over the hurdle of locating a good first job. By developing better skills, and obtaining the credentials of advanced formal education, persons with print limitations do not have to compete as hard for entry-level positions in the labor force.

In the general society, some of these occupation-related reading needs are satisfied by special libraries, such as law and engineering libraries. Unfortunately, there are very few such special libraries for the print-limited population at present. The NLS may, therefore, wish to seek additional funds to provide these specialized reading materials, in addition to the reading materials already provided for print-limited persons with more general reading needs.

INCOME--Irrespective of living arrangement or social role, most persons with reading limitations live in low-income households. Nearly half live in households with reported incomes under $5,000 before taxes, compared to only one-fifth in that income bracket for the nation as a whole. Over one-third of the respondents with household incomes under $5,000 live alone.

Implications: Poverty means that many pursuits for which one may have the leisure time are out of the question because of the expense involved. Since mass transit is problematic for those with mobility limitations, and most persons cannot afford

taxis to take them to cultural activities and community resources, they are deprived of what might be enriching personal experiences. (Perhaps this is one reason why many of the nation's senior citizen activity centers have not been well used.) Economic hardship thus compounds limitations in reading that are due to restricted accessibility, hearing loss and other physical problems.

The National Library Service provides materials without charge. Hence, low income does not directly explain low library utilization. Indirectly, however, economics play a part because many people, especially older persons, view utilizing free public services, including special libraries, as tantamount to accepting welfare or charity, rather than as their entitlements. Childhood habits, reading behavior of self and family, household and life role, and the perception of a need for alternate reading media seem to be more significant determinants of utilization than the ability to pay. But current family income, insofar as it reflects socio-economic status, may still serve as an important index of past and potential reading behavior. Many older persons live alone on very limited, fixed retirement incomes. Many others who share households are financially dependent on their families. These persons may not have access to appropriate reading materials and equipment regardless of what their socio-economic past was.

CONCERNS/ATTITUDES--Of the demographic and social factors examined, the most important ones for predicting attitudes of well-being are income and living situation. As might be expected, persons with larger incomes who are living with others seem to be more content with their lives than poor persons who are living alone.

The respondents' views regarding the most positive and negative aspects of their lives provide insights into their strivings and suggest potential guides to their reading behavior and use of rehabilitation services. In particular, we conjectured that other things being equal--i.e., knowledge, awareness, access, income, education--persons who were positive about their lives and physical abilities would be more active users of alternatives to regular print than persons who had a negative outlook. It was therefore significant to us that attitudes toward "disability" ranked fourth (4) among all responses to a question about the most positive and negative aspects of the respondents' lives, after "life as a whole" (1), "spouse and family" (2), and "treatment by others" (3). Overall, there were relatively minor variations (under 10%) in the relative frequency of expressed concerns by respondents across age groups. This compares with findings on life satisfaction in the general household population.

It appears that disabled persons and their families tend to view a limitation as a fact of life, an inconvenience and/or a cause of frustration that they must cope with. It was significant to us that over 85% of the respondents were very cooperative and talked freely about the way their limitations affected their lives. We frequently found that disabled persons wanted to elaborate at length in response to each question, possibly illustrating one of the respondents' ways of adapting to social isolation. In many instances, however, family members (mostly spouses, parents or adult children) would interrupt the respondent and abruptly terminate the interview.

Implications: We believe that a disability should be considered a family, rather than an individual concern since it impacts on family resources and lifestyle. Many persons with reading limitations are dependent on others for assistance in obtaining and utilizing reading materials. Hence, it becomes important to consider the print-limited readers' needs in the context of the family, taking into account their dependence on family beliefs, attitudes and values toward

reading and toward assisting the individual. Experiences with congenitally blind children suggest that if the family accepts the disability and deals with it as a challenge, the child is more likely to become independent and successfully incorporate the disability into his/her lifestyle. The NLS may want, therefore, to think of ways to attract the family to print alternatives in its outreach efforts.

CHARACTERISTICS OF LEGALLY BLIND PERSONS--In a prior section we reported that 86% of the respondents who were certified as "legally blind" were unable to see well enough to read print and 14% had difficulties in seeing to read regular print.

Certification of legal blindness appears to be closely associated with education, income and sex, as others have repeatedly shown for help-seeking behavior more generally: 16% of those who are severely visually impaired, with a primary school education (1-8 years) are certified as legally blind, as are 22% of those with a high school education (9-12 years), and 32% of those with any college education. Also, as household income rises so does certification for legal blindness. Of the visually impaired, the age-specific rates for legal blindness are: 6-16--39%; 17-44--67%; 45-64--43%; 65 years and over--32%. Males are more likely to become registered as legally blind than are females: 28% of the males with reading problems due to limitations in seeing are legally blind, but only 18% of the comparable females have been so certified. Legal blindness is also more common among visually impaired whites than non-whites: 24% of the presumably eligible whites are legally blind, compared to 14% of non-whites with similar visual status.

To become registered as legally blind seems more common in the northeastern and far western states, and in metropolitan areas, as compared to the rest of America.

Implications: The above findings suggest that many more Americans--perhaps twice as many as are now legally blind--might take advantage of the special public programs available to those who seek certification as legally blind, if they were aware of these programs and desirous of gaining the advantages of participating in them. Certification of legal blindness often involves registration with a state agency which is knowledgeable about special programs for persons with disabilities. Hence, persons who do not become certified are less likely to learn about the National Library Service. Second, the apparently greater acceptance of certification of legal blindness by young, male, white, well-educated, higher-income households suggests that the largest demand for the NLS program may also come from these more socially advantaged groups. These groups, however, form a very small percentage of the total population that the NLS could serve; therefore, the NLS probably needs to make greater promotional efforts to identify potential subscribers who are less skilled in obtaining public services.

Issue: HOW VALID ARE THE AFB ESTIMATES OF THE SIZE OF THE HOUSEHOLD POPULATION WITH PRINT LIMITATIONS? HOW CONSISTENT ARE THEY WITH RESULTS OF PRIOR STUDIES ON THE PREVALENCE OF PERSONS WITH READING LIMITATIONS?

Findings: The prevalence findings presented here, derived from three independent samples of approximately 70,000 households each, resulted in estimates that varied by only one to three percent for many factors, such as primary limitation, age, sex and region. These findings are most reassuring and lend confidence to our belief in the reliability of the data. A number of factors reported on come from a smaller national sample of 2041 persons. These data were weighted to reflect the same age, sex and regional proportions found in the screening samples. The precision of these data is discussed in Volume 5. We have been careful to report only those primary data for which statistical confidence is high: even so though,

the sampling variability of some estimates may be 5%-20% where the sample sizes were small.

Recent literature on disability was examined, but no directly comparable, comprehensive, empirical studies could be found to serve as a basis for validating this study's findings. Current government estimates of the prevalence rate of severely disabled persons in the general population range from 30 persons per 1,000 to 50 per 1,000 for all limitations. (See Volumes 2 and 5 for a discussion of specific issues.) Nevertheless, the AFB finding of a prevalence of approximately 1.8 million persons (above the age of six years) who have difficulty reading due to disorders in seeing, compares reasonably well with the 1977 estimates of the National Center for Health Statistics Health Interview Survey (HIS) of 1.4 million persons of all ages unable to see well enough to read newsprint with corrective lenses, and the 1976 estimates of the Bureau of the Census, Survey of Income and Education (SIE) of 2.0 million persons who are either blind or have serious difficulty seeing.

National data are available on other physical impairments, but not on how these impairments may affect reading; consequently, any comparisons are bound to be conjectural. The last estimate of the number of persons with limitations in reading or using regular print was that of Pollet (1973) and Kamisar and Pollet (1975). Using reviews of 1971 HIS and other health data, they estimated that the number of persons with limitations in reading regular print was likely to be in the range of 5.8 to 11.4 million. The midpoint figure of 7.6 million was taken as a reasonable projection. The most obvious sources of variation between these estimates and the AFB findings are: the lack of allowance in the prior estimates for the overlap among sources, i.e., the extent to which individuals experience multiple reading impairments; and the inclusion in these estimates of a large number of persons with certain diseases and conditions (e.g., muscular dystrophy, cerebral palsy and Parkinson's disease) which were rarely reported by our respondents to result in reading limitations. In our study, by determining the extent of multiple impairments causing reading limitations (roughly two per person) we arrive at a more conservative estimate of the number of persons with such limitations.

As part of the process of assessing the validity of the AFB estimates, directors of some 40 national organizations of and for persons with disabilities were asked to review the sample design and results. Although most of the organizations reported that they relied upon data prepared by federal health agencies for information about the size of their target populations, and were not very familiar with definitional issues, they indicated that the prevalence estimates by AFB seemed relatively accurate. Two major complaints about the design of the screening study were that the telephone survey excluded some deaf and deaf-blind persons living alone, and that the screening questions did not specifically ask about the reading problems of persons with learning difficulties.

Implications: As is apparent from the foregoing, care must be taken in making estimates about the size of this population and its characteristics: definitive statements generally are not warranted. The data presented here are based on what individuals report about themselves or others in their households, rather than on medical measurements made in accord with operationally-defined criteria, or test scores derived from standardized functional tests, and hence, are prone to biases of self-perception. In addition, many persons in the target population are reluctant to be identified, and thereby categorized or labelled as disabled, impaired, or elderly. (Many family members of such persons share this reluctance.)

Another limitation of the findings that bears mentioning is the fact that proxy respondents were used where the individual with the attribute in question was unable to respond for him or herself--either on account of age or limitations which made it impossible. We typically did not distinguish between responses given by self-respondents and those given by proxy respondents because our data indicate that the proxy respondents report conditions with roughly the same frequencies as do the desired respondents themselves. But there are some exceptions to this. One last consideration affecting the study's validity is the fact that reading is not only a physical activity, but also a cultural activity, greatly dependent on education and family lifestyle. Consequently, people who have reading limitations but are not interested in reading may not report such limitations because the activity of reading is not an integral part of their lives, or perhaps even within their frame of reference.

READING HABITS OF PERSONS WITH PRINT LIMITATIONS

Issue: WHAT PROPORTION OF PERSONS WITH PRINT LIMITATIONS READ? WHAT DO THEY READ?

Findings: Three-quarters of the respondents said that they had read or listened to recordings in the past month, and nearly the same number (79%) reported reading, listening to recordings or being read to in the last four months. Approximately one-quarter to one-fifth of the respondents are non-readers. This is nearly four times the recently estimated rate for the general adult population (Yankelovich, 1978).

The majority of persons with print limitations (55%) read at least books and possibly magazines and newspapers as well: 36% read all three, 13% read books and either magazines or newspapers but not both, and 6% read only books. Twenty percent of the print-limited population read newspapers and/or magazines, but not books; 10% read both, 9% read only newspapers and one percent read only magazines. The remaining five percent of this population restrict themselves to reading nothing but personal correspondence, bills, etc.

It is striking that although the proportion of persons who do not read at all is much higher among persons with print limitations than among the U.S. adult population as a whole, the percentage of persons who read books is the same for both groups. This is impressive given that the population with print limitations is, on average, older and less well-educated than the general population. One might expect persons with print limitations, for whom reading is more laborious and time consuming, to select shorter reading materials, such as newspapers and magazines, so as to maximize the pleasure they derive from reading. Indeed, many of the respondents reported that they shifted to reading shorter materials after the onset of their print limitations. But it is clear that the majority of persons are both interested in, and capable of, reading books, despite their limitations.

Implications: These findings suggest that there are many persons with print limitations who are interested in reading a variety of materials, and are, therefore, potential subscribers to the NLS.

Issue: WHAT ARE THE READING INTERESTS OF PERSONS WITH PRINT LIMITATIONS?

Findings: The respondents' preferences for reading materials were not limited to just fiction or just non-fiction. Rather, as one might expect, fiction was most popular for pleasure, and non-fiction for information and general knowledge. According to expressed preferences, the five most popular subject areas within each genre were:

Non-Fiction		Fiction	
Religion	70%	Short Stories	68%
Current Events	64%	Humor	62%
Nature	61%	Mysteries/Thrillers	43%
Travel	55%	Best Sellers	37%
Do It Yourself	50%	Children's Books	35%

The broad interest in non-fiction emerges even more clearly when the volunteered responses of other special reading interests are examined. Here non-fiction

topics outranked fiction by five to one. The respondents expressed a strong interest in the arts, in biographies and autobiographies, in mechanics and technology, in gardening, and in specialized journals.

Men and women did not differ very much in the order of popularity of the leading topics, except for sports. Persons in different regions also ranked the topics of interest in about the same order, though the intensity of interests in these topics is lower in the southern and northcentral states than in the northeastern and western states.

The pattern of variation of subject interests in relation to specific types of reading limitations and compounding limitations is slight. Where there are differences, however, they follow expected lines: for example, persons with severe mobility limitations tend to like "do it yourself" materials less than do persons with only moderate mobility limitations.

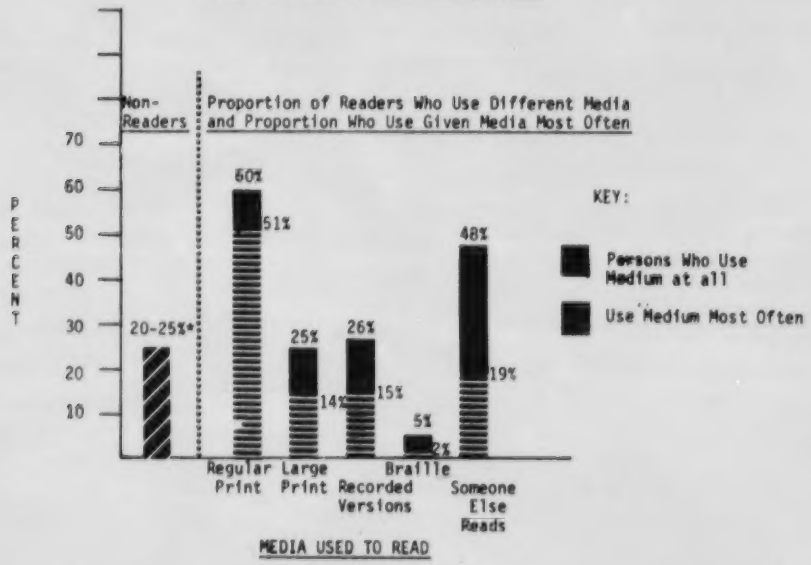
Implications: These data are fairly consistent with reading interests expressed by the general population in the past 20 years. This may give some assurance to persons responsible for making NLS selections about the value of using best seller lists and standard book reviews in the New York Times and Kirkus Review for guidance. Based on other study findings though we would urge maximal subscriber input into the selection process, given that only about 2,000 titles can be recorded or brailled each year by NLS compared to about 40,000 new or reprint titles in regular print.

Issue: WHAT ARE THE PREFERRED READING MEDIA OF PERSONS WITH PRINT LIMITATIONS?

Findings: Printed materials are far more popular among persons with print limitations than any other reading format, even though many of the respondents must use special aids such as magnifiers or other lenses in order to read them (82% of the persons with seeing limitations use glasses or contact lenses for reading, about 16% use magnifiers, and less than 0.5% use closed circuit televisions, telescopic aids or other low vision devices). See Figure 7 below for details on the preferred reading media of the respondents.

Figure 7

Media Used for Reading
Among Persons with Print Limitations



* Percent of all respondents who are non-readers.

As seen above, regular print is the most frequently used medium for 51% of the respondents who read. Being read to by another person, which is next in popularity, is used most frequently by 19%; followed by recorded versions which are the primary reading media for 15% of the respondents; large print which is used most frequently by 14%; and finally, by braille which is used most frequently by only 2% of the respondents who read.

The regular print readers read the newspaper more than any other kind of material, and the newspaper is the item that is most often read to persons with print limitations by readers. Large print users are significantly more likely to read books than magazines or newspapers, which we suspect is due, in part, to the very limited availability of large print periodicals. Listening to books on records or cassettes is about one and a half times as common as listening to magazines. Braille readers use books and magazines about equally: nearly two-thirds of the braille readers read both.

Implications: Two things pertaining to this general tendency on the part of the respondents to opt for regular print materials whenever possible suggest themselves: first, that print alternatives are not yet as accessible to persons with print limitations as they might be, for if they were, the demand for print would presumably not be as great as it is. The second point, which is more a conjecture than an established fact, is that the expansion of eligibility for the NLS program to all persons (including those with learning limitations) who need print alternatives would probably not greatly exceed the program's fiscal capacity with its present service components, because among the respondents with only physical and learning limitations who are currently eligible for the program, the demand for print materials exceeds the demand for any other reading format.* (As we shall show, among the current users of NLS Talking Books or braille, persons with non-visual limitations amount to only two percent.)

It is important to keep in mind that only half of the respondents who read use any one medium exclusively; and less than a third use regular print exclusively. Thus, although it seems clear that the majority of respondents who read prefer to use regular print whenever they are able to do so--whether because they are reluctant to venture out and try unfamiliar alternatives, because they are loath to accept helping services of any kind, because they are unaware of print alternatives, or simply because they derive more satisfaction from printed materials than any other kind--it is also true that almost three-quarters of the respondents who read (71%) are potential users of print alternatives. Some of the current non-readers may also be potential users of print alternatives, albeit to a lesser extent, as it is probably more difficult to cultivate in non-readers an interest in reading, than it is to interest readers in print alternatives.

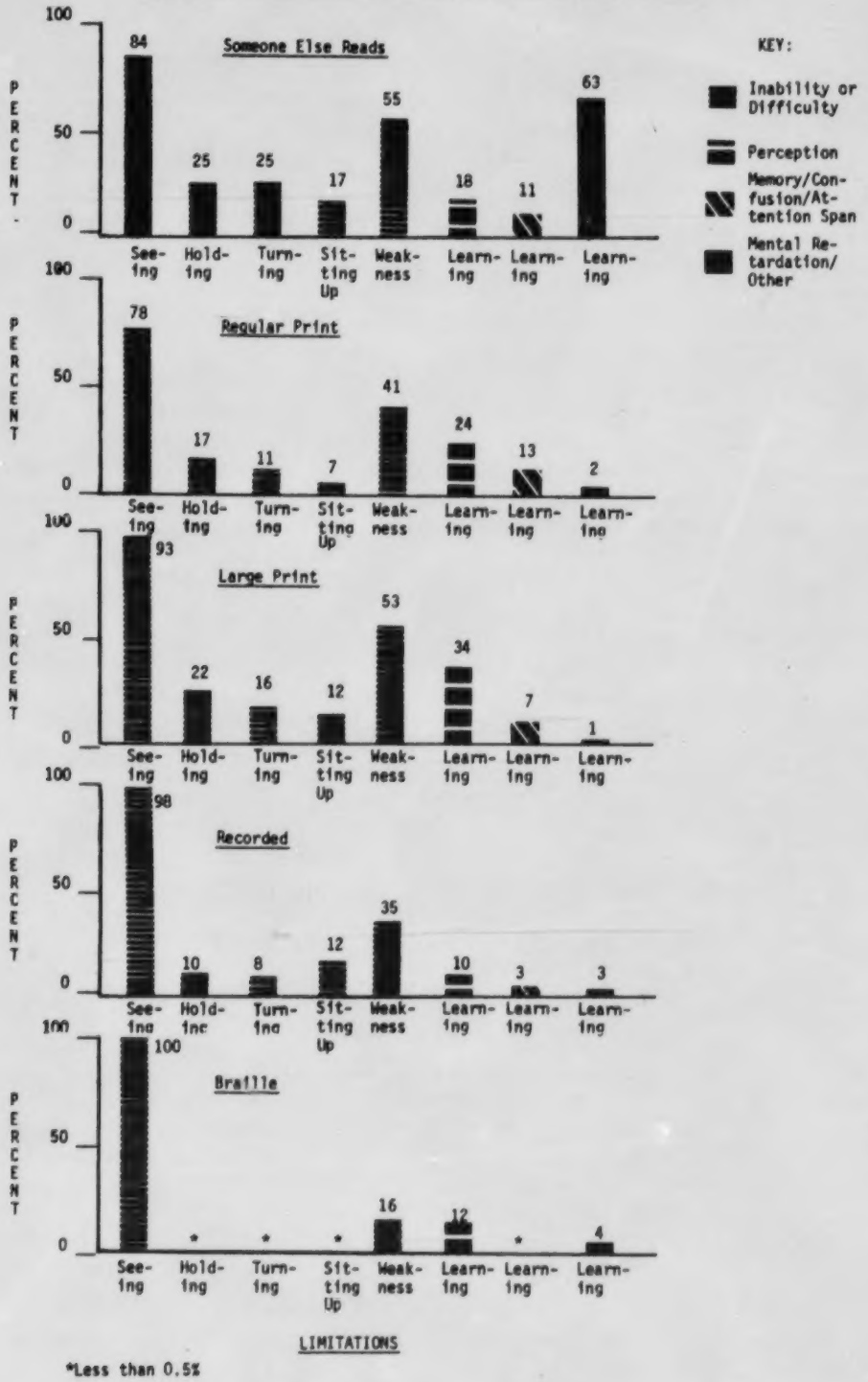
Another consideration which may bear on the issue of the apparent preference for regular print is the fact that many people are unaware that Talking Books are available to persons with physical and learning limitations as well as persons with visual limitations. Of the persons who use print more frequently than any other medium, 40% have physical disorders, such as an inability to read for more than a few minutes without fatigue, or an inability to turn pages, and about 40% have print limitations stemming from "organic dysfunctions," such as dyslexia or memory problems, while only about 20% cannot see well enough to read print without using special aids (see Figure 8). Furthermore, even if they are aware, many persons

*The preference for regular print, noted among many of our respondents, is worthy of further study. We did not ask why people preferred print to print alternatives of the same materials.

with limitations stemming from organic dysfunctions may have had too difficult a time in attempting to establish their eligibility to persist in the endeavor.

Figure 8

Reading Limitations of Persons by Primary Medium Used to Read



*Less than 0.5%

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Issue: HOW MUCH DO PERSONS WITH PRINT LIMITATIONS READ?

Findings: We classified the reading activity of the respondents into four general categories on the basis of the amount of time they spent reading.* The largest percentage of the readers (38%) were "sporadic" readers--persons who read up to three hours a week or the equivalent of up to a half an hour a day; 30% of the readers were "occasional" readers--persons who read between four and seven hours a week or between a half an hour and an hour a day; 19% of the respondents who read were "regular" readers--persons who read between eight and fourteen hours a week or between one and two hours a day; and 14% of the readers were "avid" readers--persons who read for more than 14 hours a week or on average more than two hours a day.

We considered people whose reading averages more than an hour a day to be "heavy readers" and the others to be "light readers." Overall, of the respondents who read at all, about two-thirds (68%) are light readers. Regular braille users are among the most active readers: 62% are heavy readers. As seen in Figure 9, a slightly smaller percentage of the persons who use recordings as their primary reading medium (55%) are heavy readers, though there are more avid readers among persons who read with recordings than among those who read with braille--30% compared to 23%. Roughly the same percentage of persons who use large print most frequently are heavy readers as those who use regular print as their primary reading medium (35% compared to 32%). Persons who are read to are by far the lightest readers: only 13% read for more than an hour a day.

Contrary to our expectations, we found that slightly over half of the target population who read only books apparently find it just as easy to read a few pages of a book or listen for a few minutes to a recording as persons who read only magazines or newspapers find it to read an article, or as non-media readers find it to read a letter. Fifty-three percent of the non-book readers read for under half an hour a day, as compared to 54% of the book-only readers and 30% of the book-plus readers.

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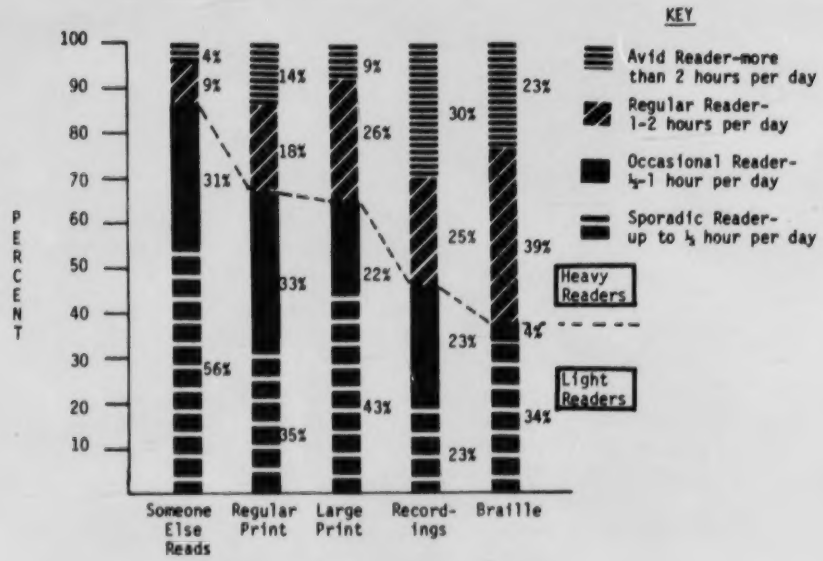
*The amount of time spent reading was selected as a guide to the level of reading activity of this special population rather than the number of books or magazines read in whole or in part, since: 1) the majority of respondents are read to by someone else and, consequently, may not always be aware of whether it is a book, magazine or newspaper that is being read or of how many items they have read during any given span of time; and 2) the reading speeds of persons with reading limitations vary much more than the reading speeds of persons without such limitations. This is so because there are more variables to consider. For example, speeds of reading braille (typically 90 words per minute), reading by listening (typically 175 words per minute), reading large print (typically 90 words per minute), and reading regular print by oneself (200-300 words per minute) vary greatly with the skill of the reader, the extent of disability and the type of medium one chooses to read with.

Figure 9

Level of Reading Activity by Primary Reading Medium



About one-third of those with print limitations who read, or after discounting non-readers, about a quarter of all respondents read for more than an hour a day. For these "heavy readers," reading seems to be an activity which is both easy to accomplish and is motivated by the desire for information as well as for pleasure. Adults who are heavy book readers appear to have read quite a bit over their lifetimes and, in many cases, to have attended college. Non-book readers, on the other hand, whose reading is largely informational, appear to be less accustomed to using libraries prior to the onset of their limitations. It is likely that the only period in their lives when the current non-readers did much reading was during school, when it was required. Overall, it appears that people who read only one kind of material, whether it be a newspaper, magazine or book, are much lighter readers than those who read a variety of different materials. Roughly a third of the "book plus" readers read for less than half an hour a day, as compared to over half of the "book only" or "periodical only" group. And over 40% of the "book plus" group read for over an hour a day.

Implications: These data suggest that the NLS might look to expand the use of its service by interesting its current magazine readers in books, and its book readers in magazines. This might be accomplished by increasing the number of books and magazines which it now circulates and by broadening the range of subject areas represented by both types of materials. Of course, this suggestion is contingent upon the availability of funds.

Issue: WHAT FACTORS ARE ASSOCIATED WITH READING?

Findings:

EDUCATION--As in the general population, educational level is one of the primary determinants of reading activity for persons with print limitations. Both the likelihood of reading with braille or recordings, and the amount of time spent reading were found to increase with educational level. For example, among persons between 17 and 44 years of age the percentage of regular readers was found to increase with educational level from 3% for those who had only an elementary school education to 15% for those who had attended high school, to 16% for those who had attended college.

ATTITUDE--Attitudinal orientation is another major determinant of reading activity. We found that persons who expressed positive attitudes toward their life as a whole, their personal health, themselves and their accomplishments, and toward their facility in getting around tend to read more frequently, to enjoy reading more and to read more heavily, than persons who expressed negative attitudes. Interestingly enough, persons who expressed more positive attitudes toward their disabilities also reported reading and enjoying reading more by about 15 to 20 percentage points, but they do not appear to spend more time reading.

Positive attitudes about one's responsibilities and accomplishments, and satisfaction with one's leisure time pursuits are all highly associated with reading braille. Generally speaking, negative attitudes about one's accomplishments and leisure time activities are associated with the use of large print and readers. But this picture is complicated by the fact the positive attitudes toward family are also associated with the use of readers, as well as the fact that persons do not generally learn braille if they are still able to read regular or large print.

OTHER SOCIAL AND DEMOGRAPHIC FACTORS--Both age and social role appear to be stronger predictors of the types of materials read and the media used to read than of the amount of time spent reading. Persons who attend school or work, for example, appear to use recordings slightly more frequently than persons in other social roles; and persons employed in white collar jobs use recordings more than twice as often as blue collar workers, though both groups use braille about equally. Similarly, living situation appears to be associated more with the media an individual uses to read than either the materials read or the amount of time spent reading. Persons who live with others report using readers much more and recordings slightly more than persons who live alone; the latter group uses large print much more frequently. But here too, the differences are less pronounced when age is controlled, for a good many persons who live alone are elderly and suffer from dexterity and other compounding limitations which often restrict the use of NLS machines.

Sex, income and a number of other factors are only weakly associated with reading activity, and the association usually disappears when the differences in age and educational level are controlled. A number of these characteristics are summarized in Table 5.

Table 5

Ways of Reading by Selected Demographic and Social Characteristics of Persons with Print Limitations

SELECTED CHARACTERISTICS	Weighted Sample Size	Way of Reading: Someone Else Reads	Regular Print	Large Print	Records	Cassettes	Braille
		Percent*					
Age							
6-16	(550)	72	66	31	30	17	2
17-44	(636)	48	59	17	28	21	13
45-64	(859)	43	65	22	20	12	5
65 Years and Over	(1515)	42	54	28	21	8	3
All Ages	(3560)	48	59	25	23	13	5
Sex							
Male	(1427)	59	54	18	26	16	6
Female	(2106)	40	63	30	22	10	4
Race							
White	(2873)	48	58	26	26	14	5
Non-White	(593)	47	64	21	12	6	4
Education							
Elementary	(1308)	53	64	30	16	7	1
High School	(1194)	42	58	24	22	13	7
College	(1011)	41	59	20	32	21	8
Income							
Less Than $5,000	(1351)	39	60	30	19	10	5
$5,000 - $9,999	(708)	53	55	23	25	8	4
$10,000 -$14,999	(441)	54	56	20	26	14	5
$15,000 - $19,999	(323)	57	72	21	26	16	7
$20,000 and Over	(236)	61	67	22	36	28	5
Social Role							
Taking Care of Home	(1368)	35	67	24	22	11	4
Going to School	(772)	66	60	24	32	21	9
Working	(449)	40	70	20	23	19	7
Looking for Work	(122)	34	60	16	32	12	24
Retired	(1350)	43	56	27	18	9	4
Not Working for Other Reason	(942)	54	53	25	25	14	5
Occupation							
White Collar	(207)	38	65	16	35	27	8
Blue Collar	(215)	40	73	22	14	14	6
Region							
North East	(666)	55	58	21	26	15	5
South	(1378)	49	56	28	18	10	4
North Central	(995)	44	64	27	26	13	6
West	(521)	44	60	20	28	15	6
Place of Residence							
Metropolitan	(2372)	46	60	23	25	14	6
Non-Metropolitan	(1189)	52	58	30	20	9	3
Family							
Self Respondent	(2249	37	62	25	24	13	6
Family Respondent	(1311)	67	55	24	23	12	4
Living Situation							
Alone	(654)	21	66	35	21	9	4
With Others	(2801)	54	58	20	24	14	4

* Percents add up to more than 100% due to the fact that more than one way of reading was reported in each social and demographic category.

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COMMUNITY FACTORS--Two findings of significance for the NLS emerge from an examination of the geographical variations in the amount of time spent reading: first, persons living in more urbanized areas are generally more active readers than persons living in suburban and rural areas. (Except in the midwestern states, the proportion of persons reading more than an hour a day within each region is more than 20% higher in the urban areas.) This trend may be related both to the generally higher levels of awareness found in urban areas and the greater accessibility of such facilities as book stores, newsstands, post offices, health care workers and social service agencies, and public transportation. And second, persons residing in the Western states are among the heaviest readers within each age group, while persons in the South and North Central regions are consistently among the lightest readers.

PARTICIPATION IN ACTIVITIES/DEGREE OF SOCIAL CONTACT--We speculated that the respondents' interest in reading was associated with their general level of participation in activities--the eight we specifically studied and in practicing hobbies generally--and that persons at either end of the participation spectrum would be the heaviest readers.* Our findings confirm this: up to a certain point, people who are more active and social tend to read more. For example, respondents of both sexes who visit or have telephone contact with people from outside their homes more than once a week read about 10% more than respondents who have social contact once a week or less. The most avid readers, however, appear to be less active and more socially isolated than the regular and occasional readers, and their reading, unlike that of more socially active persons who read both for information and pleasure, tends to be primarily for recreational purposes.

There is relatively little variation in television viewing among readers (median of respondents is 2.7 hours per day), but the heavier readers tend to listen to the radio more than lighter readers (median of respondents is 0.9 hours per day): 91% of the respondents watch TV and 73% listen to the radio.

DISABILITIES AND GENERAL HEALTH--Up to a certain point, the tendency to read with print alternatives increases with the severity of the limitation. But when multiple reading limitations are present or are compounded by mobility or health problems, persons appear to revert back to reading regular or large print and to rely more heavily upon others to read to them. As noted above, persons who most frequently read regular print or use readers tend to spend the least amount of time reading. Hence, it is hardly surprising that persons with "very severe" limitations are among the lightest readers: only 27% of those with very severe limitations read for more than an hour a day. A greater percentage of persons with "severe" limitations are heavy readers (43%), than are persons with either "minor" or "moderate" limitations (the proportions are 39% and 27% respectively): the severe group is comprised almost entirely of persons unable to see regular print.

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*The eight activities studied with their rates of participation in the past month and the percent "enjoying that activity a lot" were:

Activity	Did in Past Month	Enjoyed a Lot
Cooking a Meal	61%	38%
Going Shopping	66%	39%
Walking for Pleasure	53%	41%
Going to Church	57%	57%
Going out to Dinner or a Movie	51%	49%
Playing Games Like Cards or Scrabble	32%	32%
Attending Meetings	28%	26%
Reading	75%	53%

Not surprisingly, persons with poor or fair health read less than persons in good health: 21% of those in poor health are heavy readers compared to 32% for persons in fair health and 36% for persons in good health.

Implications: The findings broadly show that the same factors that influence reading among sighted persons impact on the reading done by persons with print limitations. The primary factors for both populations are motivation, education and age. Persons with the most serious reading and compounding limitations tend to use print alternatives relatively little, but we did not come across any findings which indicate that these persons or persons with any other particular reading limitations are not interested in print alternatives. An optimal library program for persons with print limitations, therefore, would supply all the reading materials desired by the sighted population in a broad range of reading formats.

Issue: HOW MUCH HELP IN READING DO PERSONS WITH PRINT LIMITATIONS RECEIVE?

Findings: A great many of the respondents say that they get help in reading from other people: 47% get help in obtaining the desired materials; 42% get help in going to the post office to send NLS materials off; 32% get assistance ordering reading materials; 26% receive help selecting materials; 15% get help operating the record and cassette players; 10% receive assistance in making recordings; and 19% get help with other reading-related activities.

About 83% of the persons who get help receive it from someone in the household and 25% or so get help from friends or neighbors. Fewer than 10% of the respondents use paid readers. Teachers, tutors, nurses, relatives and librarians were also specified as reading assistants, but were used only infrequently. Additionally, 83% of those who do not currently get help in reading said that they have someone to call for help should they need it.

Only a small percentage of the respondents (less than 10%) are currently making use of volunteers for help in reading, but about a quarter of the respondents were very or somewhat interested in having volunteers read to them.

Our data show that for selecting and obtaining reading materials, the effect of getting help for persons with single limitations--"minor" and "severe" limitations--seems to be somewhat masked by other factors. But for persons with multiple reading limitations--the "moderate" and "very severe" categories--getting help is associated with at least 10% increments in the proportion of regular and avid readers.

Implications: It is evident that persons with print limitations need and receive a lot of help in obtaining and using reading materials. Two things would seem to happen as a result of getting help: first, persons who do not read at all become readers--though possibly only sporadic readers at first; and second, persons who are readers spend more time reading and/or experiment with new ways of reading.

Receiving assistance is especially important for persons with multiple and compounding limitations: first, because these persons read more with help than without; and second, because, as we noted earlier, these persons appear to spend less time reading than persons with single limitations. This finding is of particular significance for the NLS, because, as we show, the NLS program is used least by persons with multiple reading limitations and compounding restrictions.

Issue: WHAT EFFECT DOES DISCUSSING WHAT ONE HAS READ HAVE ON READING BEHAVIOR?

Findings: Sharing ideas gleaned from newspapers, books and magazines is associated with higher levels of reading: avid readers discussed books and articles much more than sporadic and occasional readers.

Implications: Discussing books and magazines with others is a stimulus to further reading, and conversely, reading stimulates one to want to discuss what one has read with others. Reader clubs and reader advisors organized by the NLS may, therefore, be positive stimuli to reading.

Issue: WHAT IS THE EFFECT OF SOCIAL CONTACT ON ONE'S READING BEHAVIOR?

Findings: We found that the respondents who do the most reading also lead the most active social lives, and are the most aware of the different options (services) available to them, including the NLS program. For example, 17% of the sporadic readers have social contact with people from outside their households on the phone or in person less often than once a week, compared to 8%-9% of the regular and heavy readers.

Isolation seems to be a very real phenomenon for at least 7% of the respondents. Twenty percent of the respondents live alone, and of these, a third have contact with other people less than once a day on average, and a quarter only talk to or visit with other persons about once a day. Overall, one out of seven respondents have telephone or personal contact with people from outside their homes less than once a week.

Implications: Perhaps the infrequency of social contact among persons with reading limitations should not be surprising given that about one in five of the adult respondents are unable to use a telephone, one in four of all respondents are confined to their home or bed, one in four of all respondents are hard of hearing, and one in seven are in poor health. Nevertheless, it is alarming to discover how isolated many of these persons are.

Thus, it appears that another important element of the NLS outreach program might be to concentrate on reducing the isolation of persons with reading limitations. The use of bookmobiles, for example, which bring books and magazines to the potential users' homes would, if economically feasible, be an ideal way of simultaneously reducing the isolation of many of these persons, and of making them aware of what the program has to offer.

The adequacy of reading services becomes all the more crucial in the face of such isolation, since reading potentially serves the vital need of keeping these persons in contact with an outside world, from which they might otherwise be altogether cut off.

Issue: WHAT IS THE DEMAND FOR BRAILLE?

Findings: Based on our estimates and preliminary results from an independent study (Berkowitz and Suhr), upwards of 60,000 persons, and possibly as many as 100,000 persons, use braille in the United States--probably over half primarily for note-taking. Another 70,000 or so persons, who are presently reading in some manner, have had training in braille at one time or another but are no longer using it. Additionally, a few thousand persons are currently learning braille, but do not feel sufficiently comfortable yet to read with it. So, slightly less than half of those persons who have learned braille are using it for one purpose or another. Half of the braille users read regular print or large print too. Among the 105,000 totally blind persons in this country perhaps one-third presently use braille, with only slightly more than one-tenth (11%) using braille as their primary reading medium. The rate of braille use among the 500,000 legally blind persons is no more than 15%-20%.

Apart from the severity of one's visual limitations, the most significant determinant of braille use appears to be the age at onset of the limitation. Braille is used more by congenitally blind persons than by persons who suffered vision loss at any other time. Based on evidence from other sources, the use of braille appears to be declining now to the point where there is currently only a small group of inveterate braille book readers. There has been a consistent shift among legally blind school children in the past ten years away from reading braille to reading with recordings, large print and sighted readers. Two reasons suspected for this decline relate to the trend to mainstream children in public schools: first, resource and itinerant teachers do not get enough time with blind students to develop strong braille skills and; second, because of the great diversity of text books used in public schools (as compared to the variety of books that were previously used in schools for the blind to teach the same number of blind students) it is easier and quicker to get books recorded than transcribed into braille--especially with the decline in the number of volunteers expert in transcribing braille.

Among the most significant reasons why individuals reported that they were no longer using braille were: they had problems with braille--it is too difficult to use (31%); their physical condition--including their concentration, dexterity, strength and tactual sensitivity--had deteriorated too much (23%); and their sight was not poor enough (20%).

Although the number of persons who use braille is small, persons who read most frequently with braille are among the heaviest readers, with about two-thirds spending at least an hour a day reading.

Implications: Research on improved organizational arrangements and improved techniques for teaching braille ought to be encouraged by the NLS, as well as ways of producing braille more timely and less expensively. Two technological approaches that deserve special attention at this time are the development of paperless braille on magnetic tape, and of an inexpensive computer-driven braille embosser for use with small computer input, editing and text to braille translation systems that may be operated by persons having ordinary typing skills. Studies of the acceptability of less than perfect Grade 2 braille that might be read as the unedited output of the latter small computer systems should be undertaken. The observed trend toward declining braille usage among legally blind school children, unless reversed, may eventually lead to the loss of the primary means of achieving literacy for most congenitally blind persons.

Issue: HOW AND WHERE DO PERSONS WITH PRINT LIMITATIONS GET PRINT ALTERNATIVES?

Findings: Over a third of the respondents who use large print depend on other people --family and friends--to obtain these materials, roughly a fifth receive materials from libraries, and about a fifth obtain materials directly from stores, book clubs, subscriptions and publishers. Many respondents were not certain of the precise source of materials, perhaps because their families arrange for or obtain print alternatives for them.

Recordings and braille materials are obtained largely from libraries (60%-75%). Organizations, including churches, were reported as sources of recordings or braille by roughly 20% of the respondents who used these materials. Schools and rehabilitation centers were used by 10%-15% of the respondents.

Implications: Many persons did not single out an NLS cooperating library as their source of materials but simply said "the library." This suggests that the image of the National Library Service, as distinct from the public library system, is not very strong and that the NLS may wish to prepare promotional materials to clarify its identity and its mission. This may be particularly appropriate in light of the recent name change of the program.

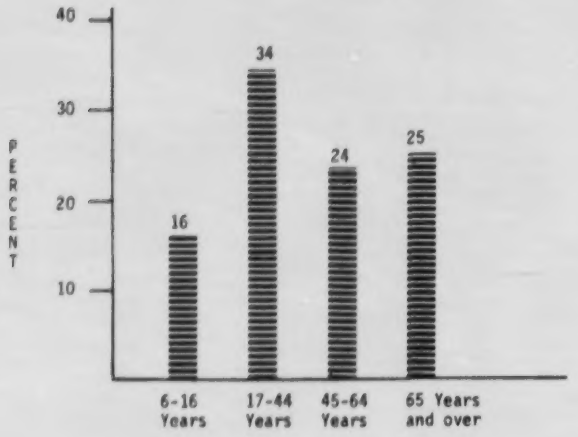
Issue: WHAT FACTORS AFFECT USE OF LIBRARIES TO OBTAIN PRINT ALTERNATIVES?

Findings: Libraries have, of course, been the traditional source of reading materials and, until the advent of television and the inexpensive paperback print book, were centers of community life for sighted persons. Overall, we estimate that about 20% of the respondents had used a library in the past four months to obtain print alternatives. About 60% of those now using libraries to obtain print alternatives had used libraries for print at one time or another. Not surprisingly, persons who enjoy reading most use the library more than others: 30% of the readers who say that they enjoy reading a lot use libraries to obtain print alternatives, compared to 15% of the readers who do not enjoy reading much.

Readers between the ages of 17 and 44 made more use of libraries to obtain print alternatives than did other adults, and school age children used them least, as seen below in Figure 10.

Figure 10

Distribution of Persons Who Read
Who Use Libraries to Obtain Print Alternatives
by Age Group



The use of libraries to obtain print alternatives, like the amount of time spent reading, is highly associated with educational level. The percentage of college-educated persons who used a library was nearly twice that of persons who had attended only high school (39% compared to 22%), and approached three times the percentage of persons who had only an elementary school education (15%).

Significantly, only 31% of the U.S. adult population has either never used one of America's 29,000 public and private libraries, or has not used one in the past ten years (Gallup, 1975). In comparison, 63% of the respondents whose limi-

tations began after age seven reported that they were not accustomed to using libraries prior to the onset of their print limitations. Of course, the print-limited population is by and large older than the general population, for whom the use of libraries declines markedly with age: 50% of the U.S. adults aged 35-49 used libraries in the past two years, compared to 31% of the adults aged 50 and over.

A third of those who were accustomed to using libraries to obtain print materials are using them now to get print alternatives, whereas about a fifth of those who were not so accustomed are now using them to obtain print alternatives. There is no marked effect of age of onset of reading limitations or of length of time one has had the limitations in library use to obtain print alternatives.

Implications: Among the print-limited, 20% had used libraries of some kind (NLS libraries, public libraries or other special libraries) in the past four months, compared to 30% of the general population in the past three months (Gallup, 1975). Given that the population with print limitations is largely older, it would seem that they are using libraries to a fair extent, especially in light of the fact that they are also less well-educated and less accustomed to using libraries than the population at large.

Issue: WHAT IS THE LEVEL OF SATISFACTION WITH READING AMONG PERSONS WITH PRINT LIMITATIONS?

Findings: On the whole, it appears that the respondents are generally dissatisfied with the amount of reading they are currently doing. Almost three-quarters of the current readers whose reading limitations developed after the age of seven said that they were reading considerably less now than before the onset of their limitations. Only slightly more than one-quarter are content with the amount of reading they are now doing, and over half of the readers are reading pieces of a shorter length now than they did before the onset of their limitations.

Implications: Two immediate steps that might be taken by the NLS to increase the level of satisfaction with reading are: first, to make sure that there is a wide variety of materials to choose from covering a broad range of topics; and second, to provide a greater assortment of shorter pieces, since as many as 63% of the current subscribers whose print disabilities developed after the age of seven indicated that they were reading shorter pieces now.

Table 6

Satisfaction with Reading by Ways of Reading

	All Ways	Someone Else Reads	Regular Print	Large Print	Records	Cassettes	Braille
	---------- Percent ----------						
Satisfaction With Amount of Reading Now as Compared to Before Reading Limitation							
Much Less	48	53	46	59	45	46	15
Somewhat Less	23	20	24	22	21	20	31
As Much	29	27	30	19	34	34	54
Presently Reads Less/Same/or More Than Before Reading Limitation							
Less	70	78	66	73	69	64	49
Same	17	11	20	12	16	13	26
More	13	11	14	15	15	23	25
Length of Materials Read Now is Shorter/Same Length/Longer Than Before Limitation							
Shorter	55	65	52	60	40	34	29
Same Length	36	27	39	32	51	51	53
Longer	9	8	9	8	9	15	18
Weighted Sample Size*	(3560)	(1706)	(2109)	(981)	(883)	(448)	(174)

*Sample Size varies by about 5% for different questions.

AWARENESS AND USE OF THE NLS

Issue: TO WHAT EXTENT IS THE POPULATION WITH READING LIMITATIONS AWARE OF THE NLS TALKING BOOK AND BRAILLE PROGRAM?

Findings: Respondents were categorized into five groups on the basis of their awareness and utilization of the NLS program prior to the AFB survey.

Not Aware.....43%

1. Never Heard - persons who were completely unaware of the program.....43%

Aware.....57%

2. Heard of - persons who were aware of the program but not familiar with its components.....24%
3. Familiar - persons who have never used the NLS program but said that they were knowledgeable about it.....18%
4. Former Users - persons who last used the NLS program more than a year ago.....3%
5. Current Users- persons who used the NLS program some time in the past year.....12%

100%

Implications: Though further research would have to be conducted on the best methods of outreach for this special population, these findings show clearly that, compared to other public services, the awareness of the NLS program is high. There is still considerable room for growth in this area though: 67% of the respondents were either unaware of the program's existence or were not familiar with particular features of the program. Many of these persons, as we have noted earlier, presumably have needs which the NLS could adequately address, were they made aware of and comfortable with the idea of the program.

Issue: HOW DID THE RESPONDENTS FIRST BECOME AWARE OF THE NLS? HOW DOES THIS COMPARE TO THEIR AWARENESS OF OTHER SOCIAL SERVICES?

Findings: Nearly two-fifths (37%) of the informed respondents first heard of the NLS from either a family member, relative or friend, and over one out of three of the persons who informed our respondents were print-limited themselves. This suggests both that "informal" lay referral systems are important sources of information for this group, and that the NLS program has a good reputation.

The mass media were the second most important sources of information about the program: about one out of four of the informed respondents heard a public service announcement on TV or radio, or saw an article in a newspaper, magazine, book or pamphlet. Of these mass communications media, television is by far the most effective in reaching the target population: yet, even so, only about one out of 12 respondents who watch TV (91% watch TV) learned about the Talking Book and Braille program from TV.

Special schools, special classes, and rehabilitation programs are also potentially important sources of information, although they do not provide referral services as actively as they might: only 12% of the informed respondents became aware of the program from these sources. Seven percent of the informed respondents became aware of the program via organizations of or for the handicapped. Physicians, nurses, clinics, hospitals and other health services informed about 5% of the respondents. The agencies of the federal government are reported to be rather poor referral sources about the NLS: they informed only about 3%.

The difficulties inherent in attempting to extend awareness of the NLS program via mail outreach are exemplified by our attempt at outreach, which involved sending about 80% of our sample information packets about the program (printed in regular print) by first class mail approximately two weeks prior to the callback interview. Seven percent of the respondents who were aware of the program reported that they had become aware as a result of our information packets; stated another way, we reduced the "Never Heard" group from 43% to 40% of all respondents. Thus, about 40% of the respondents had not read their mail. We found a high association between becoming aware of the information packets and educational level. Nonwhites, persons with extremely low incomes and persons from southern and rural areas, on the other hand, appear to be relatively unsusceptible to mail outreach. Mail outreach is also an extremely poor way to reach totally blind persons and bedridden persons, according to our findings.

The respondents' responses to questions about how they found out about special legislation or local programs related to their physical problems--e.g., a new health service or reduced fares on public transportation--show that current NLS subscribers and non-users utilized most sources of information about equally. The two exceptions to these learning patterns were: 1) 95% of the non-users reported obtaining information from TV, radio and other mass media, compared to about 84% of the users; and 2) 21% of the NLS users generally obtain information from organizations (including those of and for the handicapped), clubs and churches, compared to only 8% of the non-users. Non-users, it appears, tend to rely more on lay referral systems and informal information networks.

Of all the sources of information about potentially important special concerns, television (39%), newspapers (30%) and radio (22%) stand out as the primary sources, followed by people (33%), organizations and clubs (3%). Very significantly, libraries were mentioned by less than one percent of the respondents.

Implications: No one form of outreach is likely to be totally effective in expanding the awareness of the NLS. Print materials mailed to the families of persons with print limitations may succeed in reaching some persons, as may Public Service Announcements on radio and television. Friends and relatives of print-limited persons appear to be good outreach targets. But more important is the implementation of a broad-based educational and advertising campaign that will encourage people to seek available public services like the NLS, such as the one the NLS has already begun.

The low referral through agencies of the government is particularly unfortunate since a large proportion of respondents receive some sort of federal assistance--i.e., Social Security, disability benefits, food stamps, welfare or Medicare/Medicaid. The NLS might seek to remedy this situation by establishing cooperative arrangements with other federal and state agencies, whereby leaflets describing their services would be included along with the checks or food stamps that are regularly sent to recipients. We understand that some regional libraries have such arrangements at the local level already, and encourage the expansion of this form of outreach.

The low utilization of libraries as a source of information may be a matter of a lack of mobility or a felt inability to search out materials in card catalogues and library stacks independently, or a lack of awareness that information services are available from many libraries by telephone, or the unavailability of toll free telephone lines for inquiry. Hence, many NLS regional and subregional libraries may want to focus on expanding awareness of their information and free inquiry services.

Issue: HOW DO NLS USERS AND NON-USERS DIFFER VIS-A-VIS INTEREST IN AND PERFORMANCE OF READING?

Findings: As might be expected, NLS users are by and large more actively involved in reading than non-users: they discuss books more often, are much more accustomed to reading and using libraries, enjoy reading more, and read more often than non-users. A number of these characteristics are summarized in Table 7 below.

Table 7

Selected Characteristics of Reading Behavior for Current NLS Users and Non-Users

Reading Needs/Reading Behavior	NLS Users	Non-Users*
Characteristics	-- Percent*** --	
1. Read in Last Month	85	73
2. Enjoy Reading		
A Lot	(75)	(50)
A Little	15	24
Not Much	10	26
3. Level of Reading Activity		
Sporadic	24	42
Occasional	24	27
Regular	24	17
Avid	28	14
4. Materials Read*		
Newspapers Only Reader	2	15
Magazines Only Reader	2	1
Books Only Reader	9	9
Periodicals Only Reader	3	14
Books Plus Other Media Reader	(84)	(61)
5. Primary Way of Reading		
Someone Else Reads	13	21
Regular Print	(11)	(72)
Large Print	7	16
Recordings	(64)	(2)
Braille	6	**
6. Satisfaction With Amount of Reading Now As Compared to Before Onset		
Much Less	43	54
About the Same	23	21
More	33	25
7. Presently Reads More or Less Than Before Onset		
Less	70	74
About the Same	16	17
More	14	8
8. Length of Materials Read Now As Compared to Before Onset		
Shorter	49	65
Same Length	42	29
Longer	9	6
9. Gets Help		
Selecting Materials to Read	19	23
Writing Away for Things	21	28
Going to the Post Office to Send Things Off	18	40
Obtaining Materials	17	45
Making Recordings	29	8
Putting on Records and Cassettes	18	14
10. Discusses Books or Magazines	(78)	(43)
11. Is Accustomed to Using Libraries	(56)	(37)
12. Very or Somewhat Interested in Having Volunteers' Help	32	23
Weighted Sample Sizes for most factors are about:	(839)	(6369)

* Excludes non-media readers

** Less than 0.5%

*** Circled items are ones where there is a substantial difference--i.e., 20% or more--between groups.

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Eighty-five percent of the NLS users read in the past month compared to 73% of the non-users. NLS users were also about 15% more likely to be readers than were non-users for all age groups except the 45-64 year group, for which the likelihood was the same for both groups. Both awareness and use of the NLS were also found to increase with interest in reading: 80% of the avid readers knew about the NLS, slightly less than half of those that knew (43%) were subscribers, whereas 55% of the sporadic readers knew of the program and slightly less than a quarter of those that knew (13%) were subscribers to the program. Among the current NLS subscribers, there were as many light readers as heavy readers, but overall, the NLS subscribers are among the most active readers in the target population.

Although NLS users were more likely to have used libraries prior to the onset of their print limitations than non-users, persons who were accustomed to using libraries and discussing books and magazines with others were not necessarily more likely to subscribe to the NLS program than persons who were not so accustomed. This is a surprising finding, especially in light of the fact that persons who were accustomed to using libraries prior to developing print limitations were substantially more aware of the NLS program.

NLS users get slightly less help in reading than non-users but are more interested in having volunteers read to them: 32% of the NLS users are very or somewhat interested in having volunteers visit them, compared to the 23% of the non-users. These findings suggest that in general volunteers and recreational library services are not substitutes but complements; a person may use volunteer readers for some purposes and the NLS program for other purposes.

Implications: NLS users are not typical of the overall eligible population in terms of their reading behavior. NLS users spend more time reading and are more satisfied with their reading activities.

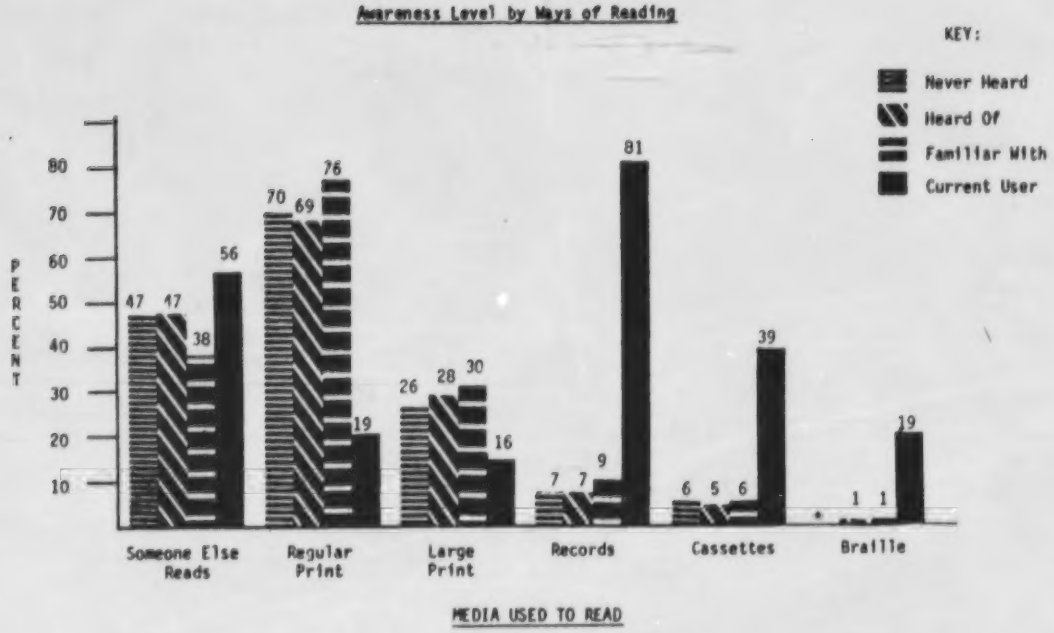
Issue: HOW DOES THE CHOICE OF READING MEDIA DIFFER FOR USERS AND NON-USERS?

Findings: Among the current NLS subscribers, recordings are used most often by nearly two persons out of three. Regular print and readers are used most frequently by about one subscriber in eight, and large print and braille are used most often by about one subscriber in sixteen. There is almost universal awareness of the NLS program among persons whose primary mode of reading is either braille or recorded materials. About 83% of the persons who read primarily with braille are subscribers to the NLS, as are 91% of the persons who use recordings most frequently. Only a percent or so of the individuals whose primary reading medium is recordings or braille are not current subscribers to the NLS. Only about 10% of the non-users read at all by listening and almost none of the non-users (1%) read braille.

Lack of awareness of the NLS does not seem to be an important determinant of reading media use. As seen in Figure 11, the level of use of most media does not vary significantly between the "Never Heard," "Heard of," and "Familiar" groups. Rather, the difference is between these groups and the NLS users. The non-users' tendency to rely on regular print, large print and readers seems to be due to a combination of factors: lack of assistance in ordering and using materials; lack of need; distrust of new ways of reading; disinterest or unacceptability of the program; and simple preference for regular print.

Figure 11

Awareness Level by Ways of Reading



*Less than 0.5%

Implications: The findings show a very impressive acceptance of the NLS program among persons who utilize the two basic reading modes supplied by the NLS--recordings and braille--and a rather substantial potential for expanding the use of the Talking Book program.

Issue: WHAT PROPORTION OF THE POPULATION ELIGIBLE FOR THE NLS PROGRAM UTILIZE IT?

Findings: The NLS program is used by relatively few of the persons who appear to be eligible for it. Nationally, we estimate that 300,000 persons or about 11% of its potential target readership in the household population were subscribers to the program in 1977.* Use of the program is expanding though, as can be seen from the fact that 41% of the subscribers have just begun to use the program in the past five years. Without data on the loss of subscribers due to death, which we did not collect, it is not possible to estimate net annual growth. Loss of subscribers due to such factors as disinterest or change in health is under 10% a year.

*Our estimate of subscription to the NLS program is much lower than the 1977 estimate of 21,300 subscribers who use braille and 549,000 subscribers who use Talking Book records and tapes presented by the NLS at its 1979 congressional appropriations hearings (U.S. House of Representatives, 96th Congress, 1st Session, 1979, p. 487). One reason is that the NLS data reflect use of NLS materials obtained from deposit collections in schools and health care institutions. The NLS has taken as a rule of thumb that each deposit collection has an average of ten users. Our study team found (on the basis of site visits) that for the vast majority of residential institutions, the 1:10 ratio far exceeds actual use. Typically, there were no more than two to four regular users of Talking Book machines at any of the deposit collection sites visited across the country, representing a rate of use of approximately 0.7 regular or occasional users to each deposit collection machine, and 0.8 users to each individually assigned machine. Part of this overestimation of deposit collection usage may stem from the fact that NLS users in institutions who subscribe to the program and receive materials as individuals are frequently included by institutions as deposit collection users. More significantly though, the NLS data re-

Implications: Slightly over one in ten persons who, by our calculations, are eligible for the NLS program under its present legislative mandate are presently using it. In contrast, nearly six out of ten of the persons who may be eligible for the program know about it. At first blush, this suggests that the NLS program is quite special, in that it is used by only a small portion of its eligible population. However, if we consider our findings about the help-seeking behavior of persons with print limitations generally, this apparent uniqueness disappears. With the exception of medical care services, the respondents availed themselves of helping services in the past month to about the same degree as they did the NLS program: 18% used help outside the home in travelling; 16% used outside help in performing household chores; 10% received some type of job or occupational training; 8% participated in organized recreational services; 7% received personal counselling; and 7% obtained help from home teachers or visiting nurses. By contrast, nearly one out of two persons (48%) received medical care in the past month.

Americans traditionally have been wary of utilizing public helping services and the respondents are no different: many of the respondents who could probably benefit from organized helping services are not receptive to them; many persons have chosen to utilize family members and friends as helping units instead. Nevertheless, our findings suggest that the more personal modes of outreach--bookmobiles brought to the subscribers' homes and telephone contact--are still likely to be fairly successful modes of outreach, and may interest some persons in the program, because they are better at increasing awareness than mail outreach, for example, and perhaps because they reduce the need for people to go out and seek help. By bringing the help to the homes, in other words, it may come to seem less like "help" and more like a useful, enjoyable and convenient option. Experimenting with the use of bookmobiles around the country might make for a good demonstration project.

Issue: WHAT SOCIAL, DEMOGRAPHIC AND HEALTH DIFFERENCES ARE THERE BETWEEN NLS USERS AND NON-USERS?

Findings:

AGE--As seen in Figure 12, age is a major predictor of prevalence rates of reading limitations, of social role and of activity level, and is also a fairly strong predictor of awareness and use of the NLS program. School-age persons (ages 6-16) and older persons (65 years and over) are equally aware of the NLS program (53%), and use the program to almost the same extent (8% among school-age persons and 11% among older persons). In the younger working ages (17-44), awareness and use are both roughly ten percentage points higher than in the school and older ages (64% and 17% respectively), while in the older working ages (45-64), both awareness and use taper off slightly (61% and 11% respectively).

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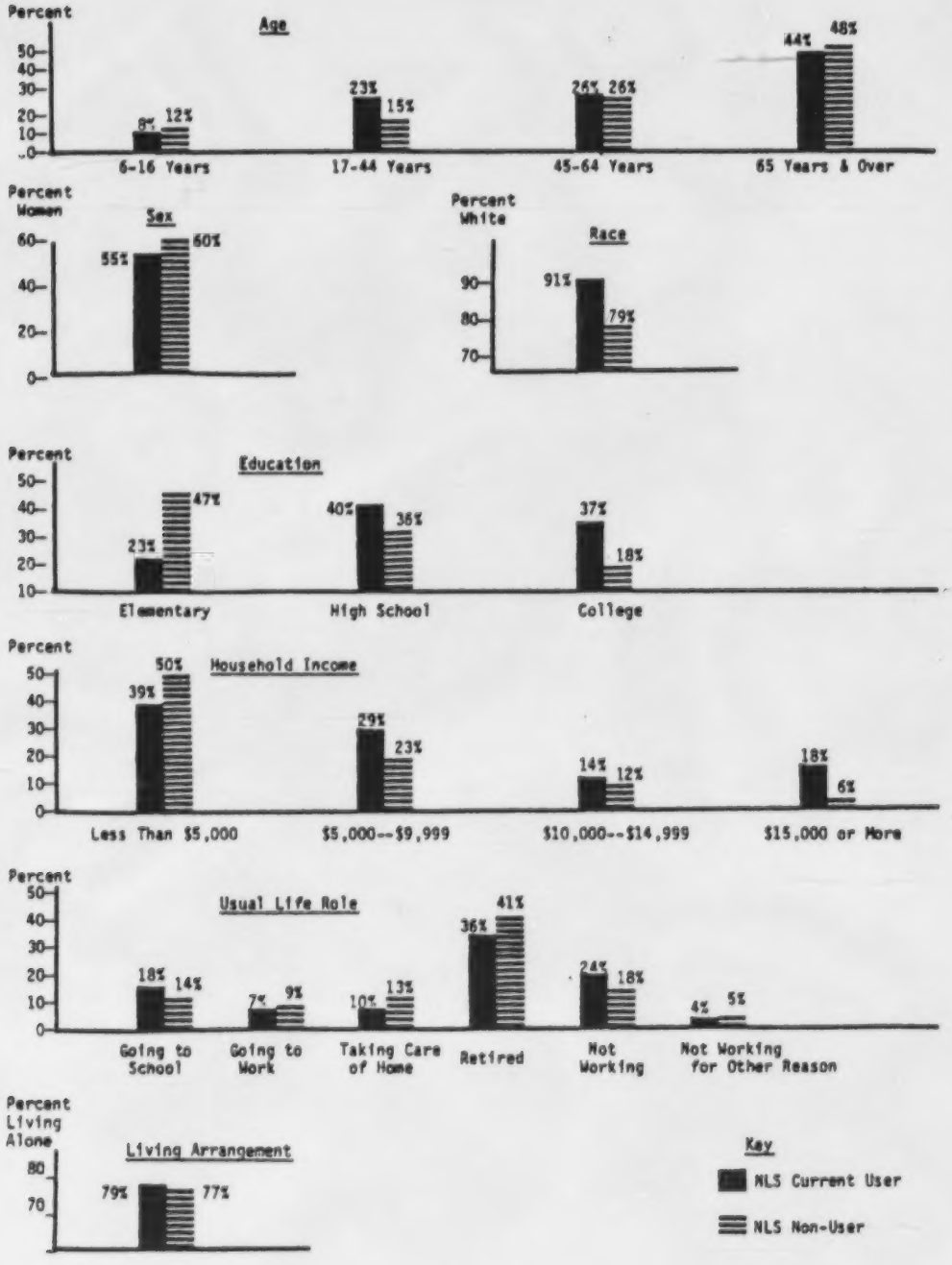
late to the use of different media. In the NLS estimates, a subscriber who reads with braille, records and cassettes may be counted three times; likewise, a subscriber who reads with braille and records may be counted twice. In addition, a single subscriber who uses more than one library to obtain books may be counted more than once. (In Volume 4, we discuss the problems of estimating use from the media data.) The estimates of NLS usership in our study are based on nationally accepted sampling techniques and should reflect a range of error of no more than plus or minus 10%.

It is interesting to note that when older persons try the NLS program they are more likely to continue using it than persons in the other age groups. Only 11% of the respondents 65 years of age and over who started using the NLS program were no longer using it, compared to a 28% attrition rate for the 17-44 age group, a 20% rate for the 45-64 age group, and a 14% rate for the 6-16 year old group.

Figure 12

Selected Social and Demographic
Characteristics of Current NLS Users and Non-Users



Implications: Outreach activities targeted to the elderly are likely to be more effective in making permanent subscribers than activities directed to the other age groups, though more intensive outreach efforts may be necessary to reach these persons in the first place. Similarly, outreach directed at younger persons, who potentially have an entire lifetime before them in which to make use of the program, may have to be more extensive than that directed at working age persons, who are often in contact with state vocational rehabilitation (VR) officers. The latter are eager to certify persons with employment potential and arrange for appropriate social services, including print alternatives.

We would have expected our public schools to be doing a better job of informing school-age children with reading limitations and/or their parents of reading programs which may be beneficial to them. Although we do not have any conclusive findings on why the awareness among these persons is so low, some possibilities which suggest themselves are the following: teachers may, albeit mistakenly, feel that since many of the younger persons suffer from learning limitations which, like dyslexia, may be outgrown, and thus have no long-term need for the program, that there is no point in their using the program at all. Other teachers may be uncertain of the eligibility requirements for the program, or may feel that it would be too difficult to establish the eligibility of children with learning limitations to bother, and still others may not want to be the harbingers of bad tidings, informing parents that their children need print alternatives. Finally, many teachers and school officials may be unaware of the services provided by the NLS, or may feel that these children are already overburdened by school work and have little need for a library, or possibly that the NLS does not supply enough information-oriented books at the appropriate reading levels. As noted earlier, whether one becomes an avid reader in later life depends in large part on the quality of one's childhood reading experiences. Hence, we would hope that outreach efforts directed at school-age children and their parents could be stepped up.

Awareness among older persons is also surprisingly low given that half of this group had visited a physician or received medical treatment within the past month, and many are receiving federal financial assistance. This suggests either that the medical establishment is largely unaware of the NLS, or, as anecdotal knowledge has it, that they take relatively little interest in rehabilitation activities that might benefit their patients. It would seem, therefore, that NLS outreach activities directed at health care and medical professionals should be strengthened, and steps taken to achieve more cooperation between the various helping services.

SEX--We found no consistent patterns of awareness and use of the NLS in the data by sex, when the data were controlled for age. Disregarding age, 55% of the NLS users are women, compared to 60% of the non-users.

RACE--Race is a significant predictor of awareness and use. The data show clearly the failure of our social system to integrate non-whites (NW) with the white (W) majority. Only among school age children and their parents do the awareness levels of the two groups about the NLS approach one another: W-54% to NW-47%. Awareness of the NLS is about one and a half times higher among white adults than among non-white adults: W-56% to 70%; NW-40% to 45%.

In most age groups, use of the program by whites is two to three times as high as it is by non-whites (W-11%; NW-4%). But in the age group 17-44, utilization rates are nearly comparable for whites and non-whites (W-17% to NW-16%), suggesting that the potential demand for the service among working age non-whites is relatively high, since only half as many non-whites are aware of the program in this age group as whites. Overall, 91% of the NLS users are white, compared to 79% of the non-users.

Implications:These data point up the vast potential for expanding the awareness and use of the NLS service among racial minority populations. Special outreach efforts may be required, however, since older non-whites are not well integrated into the mainstream of American society and many young non-whites curtail their education sooner than whites do.

EDUCATION--As we saw previously, formal schooling is the primary predictor of reading activity. When the data are controlled for age, education is also a strong predictor of awareness and use of the NLS. Awareness is about 40% to 50% among persons with an elementary school education, and increases to about 55%-65% among high school attendees, and to 75%-80% among college attendees. Use likewise increases from 5%-7% among persons with an elementary school education, to 12%-15% for persons with a high school education, to over 20% for those who have attended college. The proportion of college attendees is twice as great among NLS users as among non-users, whereas the proportion of NLS non-users with only an elementary school education is twice that of the NLS users.

Implications:The fact that NLS users are, on the whole, more highly educated than non-users is a crucial one for the NLS; it strongly suggests that there is vast potential to attract new readers to the program by providing reading materials geared to lower educational and reading levels. (As a way of double-checking this hypothesis, the NLS may wish to examine whether the reading level of most of its selections tends to exclude the non-users.)

INCOME--In assessing the impact of income, it is important to keep in mind that the NLS program is a free service. NLS subscribers are more affluent than non-users, a finding that is consistent with their higher educational level. For example, 70% of the NLS users have household incomes over $5,000, compared to 50% of the non-users. Awareness of the program increases regularly with increases in household income for all age groups. Utilization of the program, however, increases only very slightly, if at all, with income, and among persons 65 years and over, use actually declines for households with incomes above $15,000.

Implications: The curious phenomenon observed between higher family income and declining use of the NLS for persons 65 years and over suggests that for persons with higher incomes alternatives to print other than recordings and braille are used more often. Possibly, families of these older persons can afford readers, or perhaps there is somebody who has been hired mainly to do household chores and to help take care of an elderly family member. The data may also reflect a reluctance on the part of these more affluent families to accept public services.

USUAL SOCIAL ROLE--Persons who are working or looking for work, or adults who are going to school are more likely to be aware of the NLS program than persons in less active social roles. But persons with more free time are somewhat more likely to be users of the program than persons with such active lives that they have no time for recreational reading.

Similarly, we also found that 87% of the persons with print limitations who are employed in professional, managerial or teaching positions were aware of the NLS, while only 21% of such persons used the program. This too may reflect the concentration of the NLS on providing recreational rather than informational reading materials. White collar workers in sales and clerical positions tended to be aware of the program to a somewhat lesser extent than professionals and to use it to a much lesser extent. The large group of persons employed in blue collar jobs were no more likely to be aware of the program than were unemployed persons, and were slightly less likely to use it.

Implications: The pattern of these data is consistent with the use of libraries in the general population. The main difference is that the level of use of libraries in the general population is one and a half to two times as high as that of the NLS.

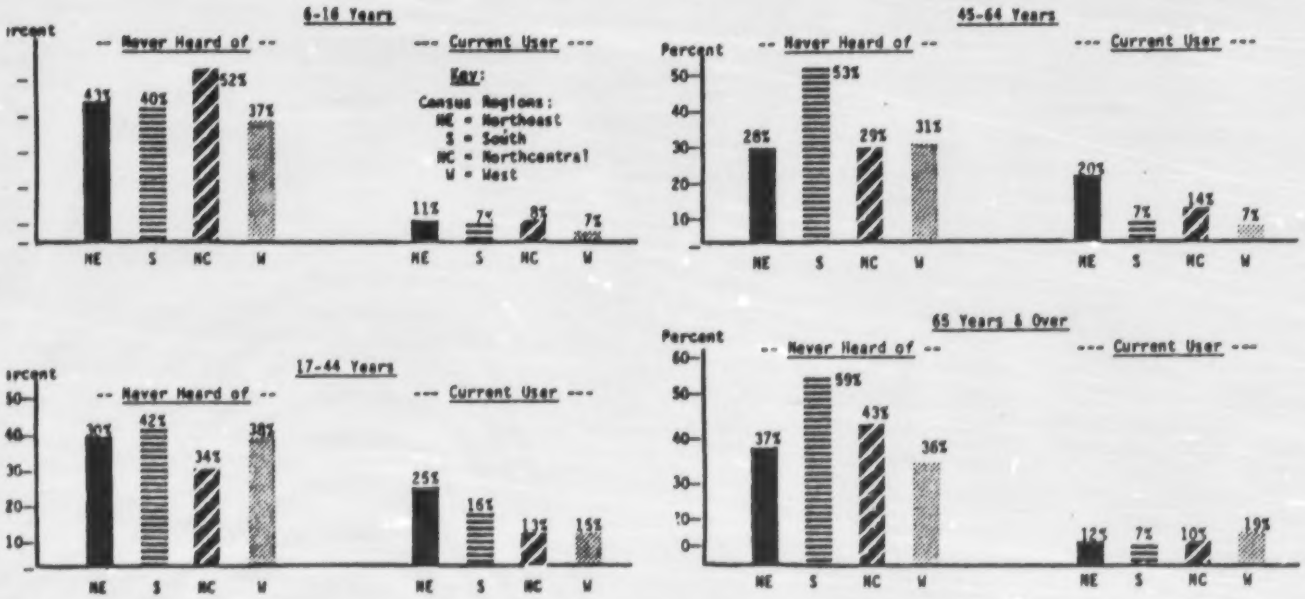
LIVING SITUATION--Living with others is associated with a slightly higher use of the NLS program among persons 45 years and over, perhaps because the other family members provide assistance obtaining and using the NLS materials, and an opportunity to share what one has read. Among young adults (17-44), persons who live alone are more likely to be aware of the NLS program than persons who live with others, but surprisingly, those who do become aware of it are less likely to use it: 87% of those who live alone are aware but only 19% use the program, compared to 62% who live with others who are aware and 17% who use the program.

Implications: Greater efforts at involving the families of persons with print limitations may have payoffs to the NLS. Such efforts might include an educational campaign in public libraries.

COMMUNITY AND ORGANIZATIONAL FACTORS--Overall, respondents in the South are least aware of the program: 54% have never heard of the NLS. Approximately 50%-55% of the parents of school-age persons with print limitations knew of the NLS in all regions, except the West, where awareness is a bit higher (63%): use of the NLS in this age group ranges from 7%-11% across regions. The similarity of the outcomes for this age group appears to be due to the public school system, because for adults with print limitations the situation is quite different. Figure 13, below, shows the percentages of the target population in each region and age group who have never heard of the NLS and of those who are current users. As is shown, adults in the Northeastern states are among the highest users of the National Library Service.

Figure 13

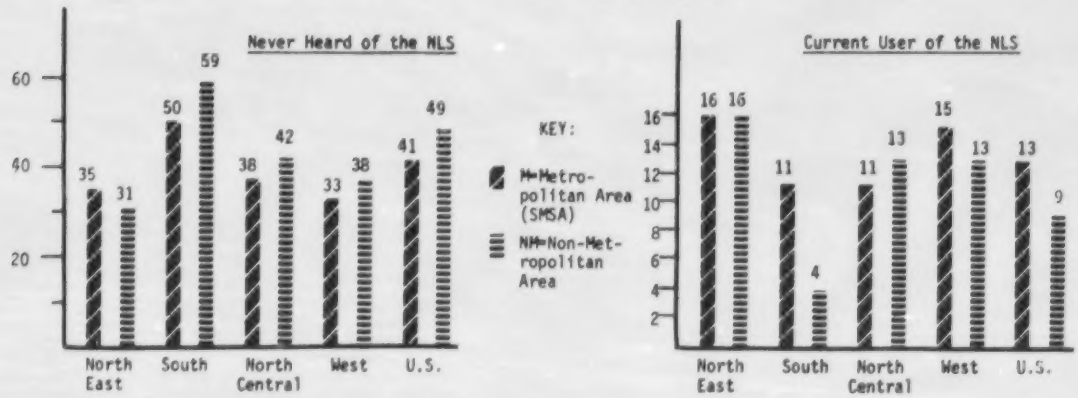
Awareness and Utilization of the NLS by Age Group and Region



Awareness of the NLS is five to ten percentage points higher among adults living in metropolitan areas than it is among those living in non-metropolitan areas, when age is controlled. Despite the different levels of awareness, use among persons 6-16 years old and 17-44 years old is at nearly the same levels in both areas. In the older age groups, use in non-metropolitan areas is about as great as it is in metropolitan areas, reflecting the differing levels of awareness, and factors such as lifestyle, education, and availability of social resources. See Figure 14 below for the precise rates of awareness and use by region and place of residence.

Figure 14

Awareness and Utilization of the NLS
Inside and Outside the Metropolitan Areas by Region



Implications: The substantial variations in awareness and use of the NLS by region and place of residence point to both the strengths and the weaknesses of the American system, in which services are established at the federal level but the responsibility to organize and distribute those services is reserved for state and local governments. One implication for the NLS might be to encourage the adoption of the standards for outreach activities in all states that have been prepared by the American Library Association for the network of libraries for the blind and physically handicapped. We would hope that the use of these standards might result in more equal levels of awareness and use of the program.

Issue: WHAT EFFECT, IF ANY, DO AGE OF ONSET AND LENGTH OF TIME ONE HAS HAD THE LIMITATION HAVE ON AWARENESS OF THE NATIONAL LIBRARY SERVICE?

Findings: Persons who have had their limitations for longer than five years are not much more likely to become aware of or to use the NLS than persons who have developed them within the past five years. Awareness of the NLS usually increases during the first five years after onset and then levels off, irrespective of the stage in life when the onset of the limitation occurred.* In fact, in the case of persons who developed their limitations before six years of age, the data suggest that, if anything, these persons tend to forget about the NLS program after a number of years.

*We are, of course, making some inferences here and treating the data as if we were examining the same persons over time, which is not the case. The organizational factors regarding the NLS and the components of the program itself have also changed over time.

Implications: This finding is significant for the NLS as a reminder of how important it is that potential referral sources become fully aware of the components of the NLS program and be ready to make appropriate referrals to the NLS soon after a person with a print limitation indicates that he/she needs special services. This finding also suggests that personality traits propel certain people to adapt to their reading limitations soon after onset (assuming that they are readers and are inclined to continue reading in the first place). This is consistent with our findings on help-seeking behavior generally, and the importance of people's being ready to accept both their limitations and compensatory services.

Issue: WHAT EFFECT DOES PARTICIPATION IN ACTIVITIES OTHER THAN READING HAVE ON AWARENESS AND USE OF THE NLS PROGRAM?

Findings: Our study showed that active persons tend more often to know about the NLS than less active persons. Two-thirds of the respondents who have hobbies and leisure interests knew about the NLS, compared to about half of those who do not have such pastimes. Users of the NLS also generally had somewhat more active leisure lifestyles than those who are unaware of the program: 78% of the users had hobbies, whereas only 64% of the persons who were unaware of the NLS did.

NLS users, however, are not the most active in terms of doing or enjoying the eight common activities we specifically inquired about--cooking a meal, reading, going shopping, going out to dinner or a movie, playing cards and board games, attending meetings, walking for pleasure, and going to church. The NLS users did only slightly fewer activities in the past month than the average of all respondents, but about 25% more than the group that had never heard of the program. NLS subscribers also expressed enjoying the activities "a lot" more than any of the non-user groups.

Implications: As the NLS must know from the readers' interests surveys it periodically performs, a full range of books and magazines is needed to satisfy the broad avocational interests of its subscribers. We encourage a more frequent distribution of the NLS publications Talking Book Magazine of the Month and Braille Magazine of the Quarter that give readers a sampling of print magazines and ask them to rank these periodically.

Issue: WHAT IS THE RELATION BETWEEN TELEVISION AND RADIO USE AND AWARENESS AND USE OF THE NATIONAL LIBRARY SERVICE?

Findings: Most persons with print limitations watch between 2.6 and 3.0 hours of TV a day: only about 9% do not watch at all. There appears to be mo e selectivitv in listening to the radio than in watching television: the typical respondent listens to the radio 0.9 hours a day, and as many as 27% do not listen at all. Given the prior finding that TV was an important source of awareness of the NLS for those that knew of the program, we were surprised that heavy TV watchers were not any more or less likely to know about the NLS than non-viewers. Heavy radio listening, on the other hand, does seem to be associated with awareness: 50% of those who do not listen to the radio at all had not heard of the NLS, 44% of those who listen for between two and three hours a day had not heard of it, and only 37% of those who listen for six hours or more a day were unaware of the program. Current NLS users also listen to the radio slightly more (median 2.15 hours) than persons who are unaware of the program (median 1.85 hours).

Heavy TV watchers were less likely to be NLS users than light watchers, whereas heavy radio listeners were more likely to be NLS users. (Listening to the radio was more common among persons unable to see than among those with any of the other types of limitations.) Seventeen percent of the persons who do not watch TV or who watch

for less than an hour a day are NLS users, whereas only 4% of those who watch TV for more than six hours a day use the National Library Service. In general though, NLS users who do watch television watch only slightly less (median 2.4 hours per day) than do persons who are not aware of the program (median 2.75 hours a day).

Implications: The findings are quite mixed with regard to whether radio or TV spots are likely to be more successful in increasing awareness and utilization of the NLS. Specific media research tailored to answer this question seems to be warranted.

Issue: WHAT IS THE RELATIONSHIP BETWEEN READING LIMITATIONS, COMPOUNDING LIMITATIONS AND AWARENESS AND USE OF THE NLS?

Findings: The NLS program still has the image of a program primarily for blind persons, even though eligibility for the program was extended to all persons with reading limitations of a physiological origin in 1966. Approximately seven out of every ten current or former users of the NLS are legally blind, and only 22% of the legally blind said that they had not heard of the program prior to our study. Eighteen percent of the current users are totally blind. Despite this image though, less than half of the "captive" legally blind population is currently using the NLS (45%), and only 8% did so formerly but are no longer. Similarly, only 46% of the totally blind population is currently using the program, and only 5% did so at one time and then stopped. Some other findings of note are given below:

Awareness

1. Awareness of the NLS is highest among the respondents who suffer solely from limitations in seeing: 64% know of the program. Awareness among persons in all other reading typology groups is typically between 45%-55%. Persons with learning limitations only are among the least aware of the NLS.

2. Awareness of the components of the NLS program is slightly higher (5%) among persons who report "inabilities" in performing reading tasks, as opposed to "difficulties." Though the differences are relatively minor, they are consistent across limitations.

3. Persons with the poorest hearing, mobility and general health are also relatively unaware of the NLS: 54% of the respondents in poor health said they had "Never Heard" of the program, compared to 38% of those in good health; 51% of those who are hard of hearing or deaf are unaware of the program, compared to 40% of those without hearing limitations. (See Table 8 below.)

Utilization

1. Use of the program is concentrated among persons with visual limitations: 98% of all NLS users have a limitation in seeing regular print, and 86% of all users are unable to see well enough to read newspaper print.

2. There are very few users who have physical or learning limitations only. About one percent of the NLS subscribers have physical problems only, although the rate is six percent for users between 17 and 44 years of age. Similarly, only one percent of the subscribers have learning limitations only, but the rate is six percent for users between 6 and 16 years of age.

3. Although 52% of the NLS users have only visual limitations in reading, 46% have multiple reading limitations. These include:

--31% with seeing and physical limitations;
--10% with seeing, physical and learning limitations; and
-- 5% with seeing and learning limitations.

The users have the following limitations:

--14% are unable to hold a book or have serious difficulty doing so;
--12% are unable to turn pages or have serious difficulty doing so;
-- 9% are unable to sit up or have serious difficulty doing so;
--39% cannot read for more than a few minutes or have serious difficulty doing so on account of weakness; and
--11% have problems in reversing letters or words, following a line or other learning/perceptual limitations; 3% have problems in memory, attention span or confusion; and 3% are mentally retarded or have other severe learning limitations.

4. The NLS program is used predominantly by persons who cannot perform the essential functions of reading print (i.e., seeing, turning pages, sitting up, etc.) as opposed to those who have difficulty performing them, even if they are legally blind. (Forty-eight percent of the current users have a single inability and 40% have one or more inabilities plus other difficulties.) And conversely, persons with inabilities have higher utilization rates than those with difficulties. Twenty-one percent of the persons who cannot see regular print now use the NLS, compared to 4% of those with difficulties seeing; 11% of those who cannot hold a book or turn pages use the program, compared to 6% or 7% of those with difficulties holding and turning; and 14% of those who cannot sit up to read use the NLS, compared to 5% of those with difficulty doing so.

5. NLS users are relatively healthy, and unlike the non-users, have relatively few mobility, hearing or other compounding limitations in addition to their reading limitations: 65% of the current users are in good health, 27% are in fair health and 9% are in poor health. Twenty-five percent of the subscribers report no mobility difficulties, 50% use a long cane or another person for assistance getting about, and 17% of the NLS users are homebound. (Looked at the other way, only 9% of the homebound are subscribers.) Two-thirds of the users indicate that they do not suffer from any major medical problems other than their reading impairment, and six-sevenths do <u>not</u> have hearing loss.

Table 8

Selected Characteristics of Reading and Compounding Limitations of Current NLS Users and Non-Users

Reading Limitations	NLS Users	Non-Users
	----------Percent----------	
1. Specific Limitations		
No Difficulty Seeing	2	16
Difficulty Seeing	12	42
Inability to See	86	42
	100	100
Legally Blind	75	14
Totally Blind	18	3
2. Reading Typology		
Single Limitation		
Seeing Only	52	31
Learning Only	1	7
Physical Only	1	5
Multiple Limitations		
Seeing & Physical	31	26
Seeing & Physical & Learning	10	17
Seeing & Learning	5	10
Physical & Learning	*	3
	100	100
3. Severity		
Minor	5	22
Moderate	7	30
Severe	48	15
Very Severe	40	32
	100	100
Compounding Limitations		
Hard of Hearing or Deaf	14	31
Health		
Good	65	50
Fair	27	35
Poor	9	15
	100	100
Mobility		
No Difficulty	27	53
Some Difficulty	9	9
Uses Aid or Person	47	15
Confined to Home	14	18
Confined to Bed	4	6
	100	100

*Less than 0.5%

Implications: NLS outreach activities are likely to be most successful in attracting persons who are unable to perform one or more of the tasks associated with reading print, but do not suffer from additional compounding limitations. This is a difficult identification assignment, as most elderly persons--who make up a large portion of the persons who suffer from inabilities as opposed to difficulties--have chronic health conditions as well. As is apparent from the fact that so few persons with primarily non-visual limitations use the program, the NLS is by and large still perceived as a program for the blind. If the NLS is to serve people with all levels of disability, the library programs are likely to require special tailoring and promotion to appeal to the frail and weak, and the physically and learning disabled as well as the blind.

Issue: WHAT IS THE SIGNIFICANCE OF LEGAL BLINDNESS AS AN INDICATOR OF AWARENESS AND USE OF THE NLS?

Findings: The factors that were highly associated with awareness and use of the NLS in the prior tabular analyses were chosen as independent variables for three multiple regression models. The aim of these analyses was to supplement our explanations and to predict future awareness and utilization of the program, assuming operation of the program continues as in the past. The dependent variables were: Model 1--a scalar variable reflecting increasing levels of awareness or use ("Never Heard," "Heard of," "Familiar With," "Former User," and "Current User"); Model 2--the "Never Heard" alone; and Model 3--the "Current User" category alone. Typically, the percentage of explained variability in awareness and use was about 27% ($R^2 = 0.27$) which is quite reasonable for analyses of this type. The independent variables were: age; sex; race; education; household income; census region; urbanization of place of residence; limitation type; certification of legal blindness; and age at onset of limitation.

We found that almost all of the explained variation in the awareness and use of the NLS could be related to four factors: certification of legal blindness, education, severity of seeing limitation and race. Other independent variables explained less than one percent of the variation. Certification of legal blindness is by far the most powerful predictor. In the regressions we wished to partial out the effects of "legal blindness" from the other independent factors. Consequently, "legal blindness" was entered into the models after the effects of the other factors had been accounted for: even so, this factor alone accounted for over half of the explained variation.

In our analyses, we also found that to the extent that household income is associated with certification of legal blindness, it is that poorer persons seek certification less often than more affluent persons. Similarly, less well-educated persons seek certification much less frequently than better educated persons, and men seek certification about one and a half times as often as women. Whites who have visual limitations report themselves to be legally blind about one and a half times as frequently as do non-whites. Since the data also show that non-whites tend to have more severe visual limitations than whites (although the rates of total blindness are about the same), one implication is that non-whites do not seek eye care and subsequent registration for legal blindness as often as whites.

Implications: In our analyses, certification of legal blindness appears as a factor that reflects certain personality traits and attitudes associated with an individual's motivation to seek out and utilize compensatory social services. The importance that this interpretation gives to attitudes toward using entitlements corresponds with our previous finding that the likelihood of an individual's seeking out and utilizing social services, including the NLS, does not increase appreciably with the length of time he/she has had the limitation, after the first five years. Consequently, "readiness" not only to accept but to seek out social services is a crucial factor in awareness and use. The findings suggest, then, that one of the most effective ways to expand the awareness and use of the NLS program is for the regional and subregional libraries to work closely with state agencies for the visually impaired and with referral agencies for persons with other types of limitations, so as to help to induce that state of "readiness" in persons who could benefit from the services provided by the NLS.

Issue: WHAT IS THE POTENTIAL DEMAND FOR THE NLS SERVICES?

Findings: It is possible to develop a very rough and conservative estimate of the potential expansion of use of the NLS program as follows. For as many as 11% of the current users of the NLS, the primary reading mode is regular print, for seven percent the primary mode is large print, and 13% use another person to read to them most often. Of the media supplied by the NLS, six percent of the NLS users read most frequently with braille, and 64% read most frequently with Talking Book records or cassettes. Turned around, the national statistics indicate that five percent of the persons who read primarily with regular print are NLS users, as are about 16% of those who are usually read to, and 10% of those who usually read large print. Employing the latter rates as a base, it would seem that at least five percent of the roughly one million plus readers who read primarily with regular print and are either completely unaware of the NLS or have heard about it but are not familiar with the program components might be attracted to the program. Similarly, 10% of the 200,000 plus persons who read primarily with large print who are relatively unaware of the NLS might be attracted to the program, as might at least 16% of the 300,000 plus persons who most often use another person to read to them and are relatively unaware of the NLS. Conservatively then, 100,000 persons might be attracted to the NLS program if a full public education program could be mounted.

A second estimate comes from an examination of the data on expressed interest in the program by non-users. A quarter of the respondents (26%) who either have not tried the program or are not now using the NLS program, on hearing a brief description of it, said that they were "very interested" in trying it. Another 22% said that they were "somewhat interested"; 15% said that they were "not very interested" in trying it; and 36% said that they were "not at all interested." Again, taking a very conservative estimate, a quarter of the non-user population that reads (about 400,000 persons) expressed a significant interest in the present program. Even if only a quarter of this group of persons who expressed significant interest tried the program and were pleased with it, roughly a 33% expansion of use would still be achieved.

Age is a strong predictor of interest. Nearly half (47%) of the parents of school-age persons said they were "very interested" in trying the program, compared to 35% between 17-44 years of age and 23% between 45-64 years. Still fewer elderly persons (21%) said they were "very interested" in trying it. The same age pattern was present on the other levels of response. There is also a consistent relationship between age of onset and interest: persons with a later onset were less interested in the program than those who developed limitations relatively early in life.

Males and females expressed similar levels of interest. But non-whites were nearly twice as enthusiastic about trying the program as whites: 42% of the non-whites were "very interested" in trying it compared to 23% of the whites. There were no notable variations by region or by metropolitan/non-metropolitan areas. Education and income, taken separately, were only very weakly associated with interest.

Among the 312,000 persons who had undergone rehabilitation training for their limitations but were not currently using the program, interest in trying the program was significantly greater than average (42% were "very interested"), but legally blind and totally blind non-users were only moderately more interested than average, which suggests that most of the really concerned readers in these groups are already subscribers.

Persons with only physical or visual limitations seemed less interested in the program than persons with multiple limitations. Persons with learning disabilities, on the other hand, were significantly more interested in trying the program: 35%-45%, depending on the specific learning disability, said they were "very interested." Poor health and restricted mobility do not appear to be deterrents of expressed interest either, suggesting, on the whole, a very positive and open attitude toward the program. Interest in trying the program was the highest among the more active readers, as might be expected.

When asked what reading materials they might be interested in, the respondents seemed to discriminate more between the types of media that are available (records, cassettes, large print, braille) than between the types of materials (books or magazines) available. For example, people who prefer to read with cassettes usually said they like both magazines and books: two-thirds are interested in books and s.ightly over half are interested in magazines. Only about four percent of the non-users expressed an interest in braille magazines. Hence, little absolute growth in the use of braille can be expected. Headphones, remote control devices and pillow phones were felt to be useful by about a third of the non-users.

Issue: WHAT ARE SOME OF THE REASONS PERSONS WITH PRINT LIMITATIONS ARE NOT INTERESTED IN TRYING THE PROGRAM?

Findings: Approximately 45% of the non-users reported, on hearing a description of the NLS program, that they could not foresee any particular problems with using it, or any reasons why they would not want to try the program. Among the 55% of the non-users who offered reasons or foresaw problems with the program, many said that they would have to try the program before they could respond fully. Fifty-seven percent of those who offered reasons said that the program did not fit into their lifestyle (i.e., they were too busy or simply were not interested); 29% said that their condition was not bad enough; 10% said that their condition was too bad; five percent thought they were too old to use it; and four percent foresaw problems with particular components of the program.

Non-users who were more knowledgeable about the program (the "Heard of" and "Familiar" groups) gave the response that their health or disability was "not bad enough" about one and a half times more often than the group who had "Never Heard"of the NLS program before: other than that the responses of the three non-user groups were fairly similar. In Table 9 below we give a more detailed account of why the non-users who were not interested in trying the program were not. Interestingly, the respondents' reasons for not wanting to try the program correspond to the reasons for not reading given by the general population.

Implications: There is considerable variation in the reasons expressed by the 53% of the non-users who noted why they would not want to try the program by social, demographic, disability and attitudinal factors. Most of the reasons proferred related to lifestyle, motivation, activity, disability and health; only a small percentage of these non-users noted particular problems that they could foresee in using the NLS. Since nearly half of the non-users did not offer any reasons why they would not want to try the program when it was described to them,

it appears that the National Library Service's prospects for converting a number of this group of non-users into subscribers are fairly good. But other data, showing that the greatest interest in the program comes from persons with multiple visual and physical limitations and persons with learning limitations, suggest that particular aspects of the program may have to be modified to accommodate these special needs in order to tap the potential users among the current non-users.

Table 9

Reasons Non-Users Were Not Interested in Trying the NLS Program or Problems They Foresaw in Using the Program

	Percent**
Not Interested/Lifestyle Too Busy	**57%**
1. Not interested, too much trouble/not worth the effort	19
2. Don't have the time/too many other interests, responsibilities	7
3. Don't need it since stopped working or going to school	7
4. Don't want to depend on service/can get along without it/ prefer reading even with difficulty/don't want charity	6
5. Get help from other people in reading	5
6. Dislike large print, recordings, braille/prefer TV, print, other	4
7. Dislike reading/not interested in books	4
8. Don't want responsibility/might lose or damage equipment	2
9. Resent disability, other	2
10. Want to be left alone and not bothered	1
Health Condition Is Not Bad Enough	**29%**
Service is not for my problem, it's only for the blind	5
Don't want to use it till I really need it/problem had improved	24
Health Condition Is Too Bad	**10%**
Physical problem/poor health/too tired, weak, sick/in too much pain	5
Learning problem/ can't comprehend, understand, remember, concentrate	3
Emotional problem/too nervous/impatient, overwrought	2
Age	**5%**
Too old	5
Too young	*
Problem With NLS Program	**4%**
Using equipment/need help	2
Receiving, returning materials	1
Other problem	1
Need More Information/Don't Want To Be Trapped Into Paying For It	**5%**
Other	**2%**
Weighted Sample Size	(3226)

* Less than 0.5%
** Percents add to more than 100%, as multiple responses were accepted.

Issue: WHAT KINDS OF SPECIAL SERVICES ARE LIKELY TO INCREASE THE USE OF THE NLS?

Findings: We attempted to assess what kinds of special services might increase the use of the NLS program by comparing the amount of reading done by persons who are not aware of the NLS with that done by current subscribers who receive four kinds of help in reading--help in selecting materials, in writing away for them, in going to the Post Office to collect or mail them and in obtaining them. The two specific findings that emerged are: 1) for the current NLS users, those who get help in selecting and writing away for materials are slightly heavier readers than average, while those who get help in going to the Post Office and obtaining materials read as heavily as those who do not get help; and 2) for persons who have never heard of the NLS, those who do not get help are slightly heavier readers in three out of four instances. The only instance where getting help seems clearly to result in heavier reading is in actually obtaining materials.

Implications: These findings suggest that the two most difficult aspects of the reading process for persons with print limitations are: a) selecting reading materials and making those selections known to librarians, etc., and b) actually obtaining reading materials once the choice of what to read has been made. The first finding implies that many NLS users have difficulty selecting braille and recorded titles available from the regional libraries on the basis of the descriptions provided in Talking Book Topics and Braille Book Review, as well as in picking the selection numbers out of these listings and completing the order form.

It appears, on the basis of the second finding, that one of the main selling points of the NLS program, which perhaps ought to be emphasized in the outreach activities directed at non-users, is the fact that they would not have to go out and obtain reading materials were they to become NLS subscribers, nor would they have to make selections, if they didn't wish to, as there are librarians who are willing and able to make such selections for subscribers on the basis of their profiles of reading interests.

The data also suggest that an effective way of expanding the amount of reading done by the current subscribers may be by directing staff dollars and time to services that will: 1) advise subscribers about appropriate reading materials; 2) simplify the ordering procedures; and 3) expand the toll free telephone calling services. Additionally, these data support a prior finding: should the Library of Congress be interested in expanding services to persons who have more compounding limitations (poor health, mobility restrictions, hearing limitations) services that will actually bring reading materials to the reader, like bookmobiles, would also seem promising.

SATISFACTION WITH THE NLS PROGRAM

Issue: WHAT ARE THE PRIMARY REASONS FORMER NLS USERS STOPPED USING THE NLS PROGRAM?

Findings: Among the respondents, roughly 2% had used the NLS program at some time and then stopped. Projected nationally, the former user group represents 61,000 persons, one-third of whom had not used the program in the past three years. Nearly two-thirds of the former users reported that they had used the program for over a year; only 17% had used it for as little as three months.

Nearly three-quarters of the former users reported that changes in their life style, attitudes toward the program, or motivations for reading generally contributed to their discontinuing use of the program. Half of the former users said dissatisfaction with the NLS contributed to their terminating use of the program; the areas of discontent were the same as those mentioned by the current users. About a quarter of the former users found that they did not like reading by listening or touch and sought other ways to satisfy their reading needs, and 10% did not want to depend on the program, to cause anyone any trouble, or to accept charity.

About a quarter of the former users noted changes in their health or the severity of their reading limitations. Others said that they could no longer concentrate, remember, or sit quietly; still others said that they were too nervous and impatient to use the Talking Book equipment or braille.

Implications: Although a third of the former users said that they were interested in trying the program again, there appears to be relatively little that can be done to reinterest the other two-thirds of the former users.

Issue: WHAT IS THE OVERALL LEVEL OF EFFECTIVENESS OF THE NLS PROGRAM?

Findings: The findings pertaining to the overall effectiveness of the program as it is now constituted are quite mixed: about 40% of the NLS subscribers have used the program for over five years and 40% have used it for between one and five years, indicating that when one begins to use the program one typically remains a user for some time. This is a very positive indication of overall effectiveness. However, the program is only being used regularly by particular segments of the print-limited population; it is used minimally or not at all by other segments of the target group. Many persons are unable to benefit fully from the NLS services on account of dexterity, learning, hearing or mobility limitations, or some combination thereof, which the NLS equipment as it is currently designed does not accommodate. There are other persons who cannot listen to Talking Books for extended periods of time due to limits in their visual perception, memory, concentration or attention span, or concomitant comprehension limitations, and who do not have access to materials of a sufficiently short length. There are also many subscribers for whom the NLS program is but one of the many fragmented reading services that they utilize.

As we noted earlier, the NLS program is an adequate and well-liked source of recreational reading materials for persons who are content to read whatever is available and to supplement their need for specific titles by other means. But respondents who are avid readers have expressed a desire for a wider array of fiction and non-fiction materials at the same time that those materials are available to the general population. Similarly, professionals, students and informed lay persons have expressed a desire for current information on particular topics and for such commonly used research tools as the annual U.S. Almanac or the Reader's Guide to Periodical Lit-

erature, neither of which is currently available in alternative formats to regular print.

Implications: We encourage the NLS to continue making the sorts of design improvements it has recently made in the cassette and record players, such as colored buttons on the cassette players and record guides. Incorporating such necessary human factor considerations as good tone quality for extended listening, portability, reliability, and, most importantly, ease of operation is likely to increase the use of the playback equipment among persons who have a minimum of physical strength and dexterity as well as waning powers of concentration and audition. The second major concern is that there be an adequate selection of reading materials to meet the needs of persons with diverse interests in a timely manner. We hope that there will be adequate federal funds in future years to increase the supply of both informational and recreational materials.

Issue: WHAT PARTICULAR PROBLEMS DID THE CURRENT SUBSCRIBERS HAVE IN USING THE TALKING BOOK AND BRAILLE PROGRAM? WHAT IMPROVEMENTS DO THEY SUGGEST?

Findings: Sixty percent of the current NLS users and 68% of the former subscribers indicated problem areas with the program. A great many of these issues, we note, are not the sole responsibility of either the NLS or the state and local library network, but require the cooperation of both groups. Many of our findings are consistent with the standards suggested by the Health and Rehabilitative Library Services Division of the American Library Association (1978) for the National Library Service. We have summarized the specific suggestions made for remedying problems in each of the areas that were of "high" or "medium" concern to the readers.**

SUGGESTIONS FOR IMPROVING THE NLS PROGRAM

I. Choosing and Ordering Materials

1. Provide more volunteers, more readers' advisors, and a wider availability of toll free services to facilitate ordering. Clarify and simplify ordering instructions and utilize an easier number system for ordering selections by mail.

2. Provide all subscribers with adequate up-to-date information on new selections. Provide more specific and in-depth descriptions of selections, short excerpts of the actual text and of recording narration with the same narrator who reads the selection, and a rating of the difficulty and level of language presumed by the selections.

3. Provide descriptions more frequently than at present (bimonthly), with up-to-date (annual) cumulative listings by subject area of all NLS materials--especially non-fiction materials--that may facilitate professional and research endeavors.

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*In contrast to the 40,000 or so print titles that are made available to the general public each year, the 1979-80 NLS budget allows for the preparation of about 2,000 new braille and recorded titles. According to the descriptions in recent issues of Talking Book Topics and Braille Book Review, the majority of NLS titles appear two years after the print versions and recorded books are at least a year in arrears, although some best sellers and other popular titles appear on flexible discs as quickly as three months after the printed versions.

**The data on the particular aspects of using the program that presented problems to the current and former users and which resulted in the above suggestions are detailed in Chapter 8 of Volume 2. The ranking of problems was arrived at by comparing the number of readers who indicated having problems with, or offered suggestions for, the improvement of various aspects of the service.

II. Quality, Quantity and Content of Available Materials

1. Provide more formal and regular reader input into the process of title selection to maximize the utility of funds for selections.

2. Provide more informational materials generally, and expand the number of titles in many specific subject areas--e.g., the arts, biography, popular culture, etc.

3. Provide more short run and customized reading materials to satisfy specialized needs--especially informational materials for the professional.

4. Speed up the review, copyright clearance and production process to reduce the lag between the time printed materials appear and the time recorded and braille materials are available.

5. Supply a wider range of high interest/low vocabulary materials to meet the needs of an audience consisting of many persons who are slowing down in alertness.

6. Supply more short stories and magazines to meet the needs of the 50% of the subscribers who are reading shorter pieces now than before the onset of their limitations.

7. Select narrators whose voices better match the subject matter. Minimize spoken recordings using narrators who have strong accents (American or non-American). Utilize more than one voice for more of the books and magazines.

III. Accessibility--Receiving Materials from and Returning them to Libraries

1. In states where there are no restrictions against using volunteers, organize a volunteer network to pick up and deliver reading materials and equipment, or utilize bookmobiles, to reduce the necessity of getting to a post office to pick up and return oversized reading materials that do not fit into mailboxes.

2. Check all materials before they are sent out to subscribers in order to minimize the shipping of incorrect, incomplete or damaged materials.

3. Arrange for a higher postal priority to be given to the delivery of "free matter for the blind and physically handicapped" to reduce frequent delays in shipping.

IV. Design, Operation and Maintenance of Record and Cassette Players*

1. Design more compact and more portable record and cassette players which

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*The NLS is currently examining prototypes of a Talking Book machine that will incorporate a record player and a cassette player. A number of the desirable features that we have identified are under investigation including: a cassette track-switching mechanism that eliminates the need for turning the four track cassette and permits six hours of unattended listening time; improved sound reproduction; and incorporation of a speed control for the phonograph as well as for the cassette player. But it is not as portable as the current non-combination cassette machine. NLS plans an extensive field evaluation of the combination machine.

require a minimum of dexterity, coordination, fine motor control and strength for independent operation and storage.

2. Devise record players that can be operated totally automatically, so users do not have to put the needle on the record in order to start the machines; despite needle guides, it is difficult for many users to set the needle in the correct place. Make the record player in such a way that, like commercial players, it is possible to stack the records.

3. Redesign the cassette players to have fewer controls and ones that are more pressure sensitive; develop a simpler four track operation which plays through all four tracks without requiring adjustment (four track is especially confusing to many older persons).

4. Improve the sound quality of players--especially the record players. Provide better distortion-free amplification for extended listening, particularly for persons with hearing problems, and add tone controls.

5. Redesign the cassette players so they can be used for recording as well as playback. (At present, the NLS legal mandate does not allow for the incorporation of recording devices in the NLS machines, but for reasons outlined in Chapter 8 of Volume 2, this might still be worth pursuing.)

6. Design NLS players or prepare recordings with some mechanism which permits indexing and indicates, for example, how many pages (or minutes) into the book the reader is every couple of pages or so.

7. Make records more durable so that they will scratch less easily; devise a new way of winding the tapes in cassettes to minimize skipping and tangling.

8. Design record players which incorporate speed control and pitch devices, which are now available only as accessories at personal expense.

9. Make available more durable needles that will ensure the continued fidelity of recordings; arrange for an easy way to replace needles, which currently break too easily.

10. Design machines to facilitate simple repairs and routine maintenance (e.g., cleaning heads on cassette players).

11. Provide explicit instructions on how to repair simple common machine problems, and offer expanded maintenance services (preferably in the home) to facilitate rapid repair of the equipment.

THE ROLE OF HEALTH CARE INSTITUTIONS IN SATISFYING THE READING NEEDS OF RESIDENTS WITH PRINT LIMITATIONS

This section highlights the views of staff in U.S. health care institutions about the potential of residents for self-care and for reading with print alternatives. The specific findings taken up here are more fully substantiated and interpreted in Volume 3 of this study.

BACKGROUND FINDINGS ON CHARACTERISTICS OF RESIDENTS AND INSTITUTIONS

The residents of health care institutions throughout the U.S. are strikingly similar once one overcomes some of the superficial differences in how people look or are treated (i.e., whether they are dressed or in bed clothes, and whether they are heavily sedated or function without behavior-controlling drugs). In virtually every institution, there are large numbers of amiable, alert, though somewhat disabled people, and there are also some severely mentally and physically impaired people. In long-term care residences, people commonly have multiple chronic conditions, including mobility impairments for about 70% of the residents. In special schools, which accommodate students of varying degrees of self-sufficiency, a great variety of needs are served. Although people in hospitals may have multiple health conditions, they are typically treated for a single condition such as a stroke, kidney dialysis, heart disease or fracture. Increasingly, admission to health care residences has been based on medical condition rather than social needs alone; in 1976, 80% of those admitted to these institutions had one or more medical conditions.

In the U.S. today decisions about how people will be cared for are left up to the attending physicians and facility staff. There are widely divergent opinions as to the intellectual capabilities of persons in institutions--particularly elderly persons--diagnosed to have the same physical condition. For example, in some facilities, people recuperating from strokes may be involved in physical therapy to recover mobility skills and in occupational therapy to relearn the fine motor coordination skills needed to dress or write, while in others, they may be tied into chairs or beds, or seated in rows in a lounge or hallway, just mumbling or withdrawn.

We found that assessments of the functional abilities needed to read are not routinely done in long-term care institutions or hospitals. For example, about one-half of the institutions reported that eye conditions were checked for each resident/patient on admission, but our site visits showed that only two of the 48 facilities visited conducted vision screening on a regular basis. Case records alone do not provide a good source of referral for special reading services. In long-term care institutions, where average lengths of stay are about three years, abilities often change over the duration of the stay.

Women outnumber men in health care institutions usually by three to one. It was not unusual to see younger people, often multiply impaired but quite mentally alert, in an otherwise geriatric setting. The lack of intellectual stimulation--translated into cultural or social activities--was characteristic of nearly every setting. We saw little evidence of life-threatening violations or life support system problems as reported in earlier studies, but we did observe frequent examples of violation of individual dignity, privacy, and general ignorance of the potential for rehabilitation. Drug use to control behavior, pharmacologically manage depression or psychological condition, or as a conventionally accepted practice was found to be extensive. These drugs often limit attention span, alertness and the motivation of residents toward self-initiated activities like reading, which require concentration.

Institutional administrators are not typically involved with the direct care or service programs for institutions with more than forty beds. Most of these managers are fully absorbed with the issues of cost-containment, program and staffing requirements, paperwork and image. Financial survival is a major concern of top level management in many facilities. Competition for residents, patients and students is keen in all but the most rural areas of the U.S. According to our survey findings, physical and mental rehabilitation are low organizational priorities.

Issue: HOW IS READING VIEWED IN INSTITUTIONAL SETTINGS?

Findings: Reading is usually regarded by institutional staff as an "extra" or special service--except in the schools--and is provided only when it fits into the overall organizational goals and can be assigned as part of specific staff responsibilities. Many hospital staff believe that reading is the responsibility of the patient or family. However, in hospitals where there is a heavy emphasis on rehabilitation and "whole person" models of care--i.e., where the physical, psychological and social needs of the person are all treated--reading is more likely to be viewed as an important component of care.

A recent federal study reports that among the common leisure activities of residents in health care residences and schools, reading is third only to watching television and attending religious services. However, visits to institutions do not provide one with the impression that reading is universal among most residents--healthy or ill, blind or sighted, physically impaired or not. Staff and residents tend to downplay reading as an isolating activity (with the exception of newspaper reading) since it does not involve any direct contact with other residents, compared with other widely attended social activities. We did not see large numbers of people reading in public areas such as lounges or bedrooms--probably because of the dominant presence of television sets in these locations. But we did see more indications of reading in the non-profit, intermediate care facilities, serving college-educated professionals and upper income residents. (This supports our household study showing the trend toward higher readership among these groups of individuals.) Reading with magnifiers or other optical aids was observed only infrequently.

Implications: Disinterest in or apathy toward reading is characteristic of most health care institutions. As such, the effective demand for NLS materials is likely to be below its potential.

Issue: WHAT IS THE AVAILABILITY OF PRINTED READING MATERIALS?

Findings: A great majority of the institutions surveyed (86%) stated that they make printed reading materials available to their residents or patients. About two-thirds (65%) of all institutions surveyed reported receiving books from a public library or library for the blind and physically handicapped. In many instances though the collections we observed were outdated, unappealing and only very rarely used. Only about 10% of the institutions reported having large print collections, and 50% of these had fewer than seven large print books--which documents the critical shortage of these materials in institutions. The large print materials that were available consisted largely of religious or inspirational periodicals or issues of Reader's Digest. Magazine subscriptions for the institution were not typical and often single issues were tattered, outdated and missing pages and covers. However, we seldom saw an institution that did have a good collection of materials where people did not take advantage of it. A surprisingly high proportion of the institutions

visited keep their reading materials locked in storerooms or shelved in activity rooms that are closed for much of the day. Book collections were also often relegated to dark, inaccessible corners of multi-use lounges where neither lighting levels nor table space were sufficient for reading and where the television dominated activity during most of the time. This situation, though understandable given that space in institutions is at a premium, appears to be remediable.

Implications: The dearth of printed materials and quiet, well-lighted places to read suggests that potential users of print alternatives will have to depend largely on resources other than those of the institution to meet their reading needs.

Issue: WHAT IS THE LEVEL OF AWARENESS OF THE NLS PROGRAM?

Findings: Institutions are generally aware of the existence of the Talking Book and Braille program: 86% of the institutions surveyed were aware of the service and 65% of the staff who responded to the survey had personally listened to Talking Books. But most institutional staff identify the NLS program as a service for the totally blind. With the exception of schools for the blind, few staff realized that residents or students with physical limitations, or those with low vision or learning limitations of a physiological origin might be eligible.

Awareness of the NLS was highest among long-term care residences (91%), followed by schools (77%) and hospitals (72%). The institutions that were most likely to be unaware of the program were hospitals, small, long-term care institutions and schools, other than those for the blind. Awareness seems in part to be related to whether or not the institution has a recreational, activities, social service or occupational therapy program: 90% of the institutions that had one or more of these programs were aware of the NLS, compared to 78% of those without such programs. Looked at the other way, 50% of those institutions that were unaware of the Talking Book program did not have such specialists. The main sources of information about Talking Books for staff were: printed literature (31%); residents (31%); professional conferences (25%); libraries (24%) and agencies for the blind (23%). Most of the current individual subscribers we spoke with during our site visits said that they had known about the program before entering the institution.

Implications: The NLS is doing a good job of getting the message to institutional staff about the Talking Book and Braille program, yet, conservatively, 4,500 institutions across the country have not heard of the service, and among those that have heard many are unclear about precisely who is eligible for the program. In light of this, the NLS may wish to redesign its promotional literature and target it to activities, social service and occupational therapy specialists, upon whom the main responsibility for institutional subscription to the program appears to devolve.

Issue: WHAT IS THE EXTENT OF USE OF THE NLS PROGRAM?

Findings: About half (52%) of the institutions that responded to the mail survey reported having one or more current readers of recorded materials. These figures vary according to the type of institution, with rates of 61% for health care residences, 51% for all schools and 33% for hospitals. The rate of use among those aware of the service is highest in long-term care facilities (68%), followed by schools (62%) and hospitals (41%).

We did not find any significant regional differences in availability and use of special reading services. Many of the minor variations, such as slightly lower rates of utilization in the southern and western regions, parallel more general differences in the extent to which institutional and social services have been developed in the various regions. Since institutions in rural areas tend to serve persons with a wider range of ages and disabilities, and to have fewer specialists, lower levels of staff and less frequent opportunities for in-service education, we presumed there would be a lower use of special reading services. But, in fact, we did not find this to be the case. The major problem in rural organizations was the lack of orientation and training available to the staff and residents in the use and repair of NLS equipment.

In those institutions receiving NLS materials, 48% report that individuals receive materials assigned directly to them and 73% receive materials as a deposit collection. However, site visit data indicate that these figures must be considered tentative: many institutional staff have no notion of how a machine was initially assigned and apply their own definition to the term "deposit collection," according to whether a machine is used exclusively by a single individual or is shared among several residents. The median number of users of shared equipment and materials was estimated as 3-4 per institution. During site visits we found very few instances where several people used the machine in a group; more commonly one machine was taken by staff to several individuals in the course of a week or a month. According to staff, the median number of residents who subscribe to the NLS themselves directly is two (2), but this figure is higher than our site visits led us to believe. Overall, about 75% of all NLS readers in all types of institutions use materials weekly or more often.

As in the household studies, very low rates of braille use were found among institutional residents. Excluding schools for the blind, 85% of the institutions surveyed reported no braille readers. Of all those institutions with NLS materials, only six percent report possessing any braille.

An important distinction needs to be made between <u>possession</u> of NLS equipment and materials and actual <u>use</u> of the program. Having materials and equipment does not ensure that they are used. There is considerable confusion among institutional staff as to whether machines are actually used or not, and if so, how widely they are used. This confusion results in highly inaccurate estimates of use. Part of the confusion stems from the difficulty in identifying equipment that is assigned to the institution for shared use by the residents (i.e., deposit collection items) and that loaned to individual subscribers residing in institutions. Identification is further complicated by lack of agreement about what is meant by a "deposit collection," by the high turnover of staff and residents and by limited staff awareness of individual patterns of use by residents, due to the fact that staff charged with the responsibility of reporting on usage do not actually interact with or observe people using equipment. In addition, there is a tendency on the part of some institutions to overestimate usage because of a felt need to justify keeping machines by reporting a high degree of need among residents.

<u>Implications</u>: About two-thirds of the institutions that are aware of Talking Books are current subscribers. These and other findings on use of the program suggest that it has considerable acceptance in health care facilities, but also that there is substantial potential to expand subscription among those institutions already knowledgeable about the NLS.

As is apparent from the general confusion over the criteria for a "deposit collection" machine, and the number of persons actually using NLS equipment, better systems of obtaining readership and circulation data are both possible and necessary. One means of obtaining more accurate estimates of actual use of Talking Book records and cassettes in institutions might be to design reporting forms to record actual use and to implement their use in institutions; such forms would, to a large degree, eliminate the need to make estimates by providing actual figures. Based on our results, a more accurate rule of thumb for estimating usage of reading materials sent to institutional deposit collections than the NLS practice of figuring ten persons per deposit collection would be two to four residents per collection. The discrepancy between our figures and the NLS figures confirms the need for better methods of obtaining readership data.

At the heart of the issue of utilization of the program among institutionalized persons is the low identification of potentially eligible residents or patients.

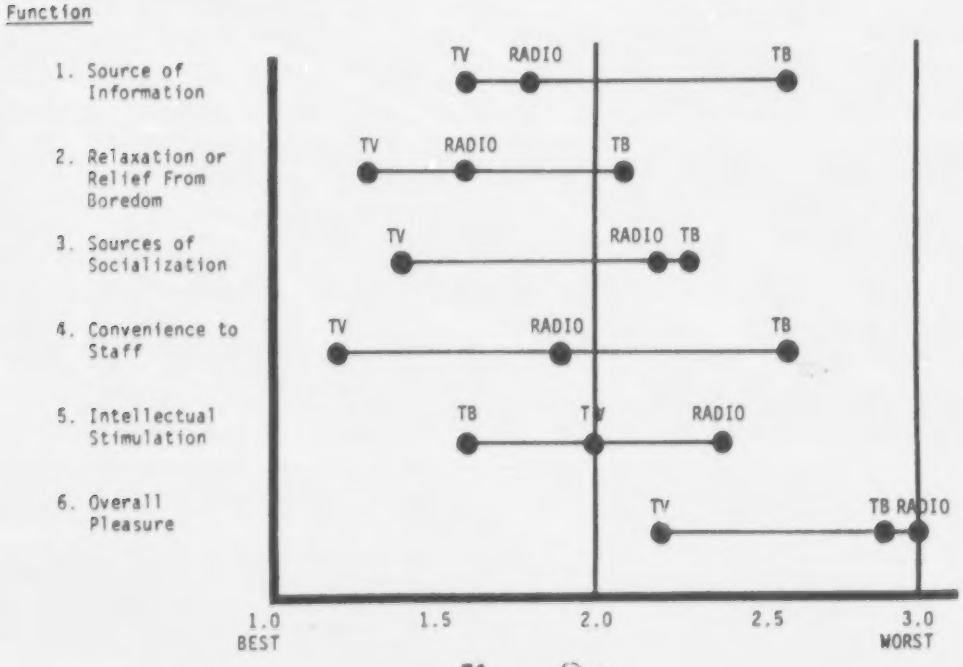
Issue: WHAT ARE STAFF RESPONSIBILITIES FOR AND PERCEPTIONS OF THE NLS PROGRAM?

Findings: The primary responsibility for implementing institutional use of the NLS program in nursing homes typically falls to staff charged with recreational activities who, as a result of federal requirements for reimbursement, are being employed more frequently than they used to be. In hospitals, social workers are more likely to identify users and make arrangements for machine use, while volunteers provide the direct service to the user. Nursing assistants in health care residences supplement the activities directors, and are generally called on to assist the readers with machine operation.

In our mail survey, staff rated Talking Books significantly lower than television for most functions, including: source of information; relaxation or relief from boredom; source of socialization; convenience to staff; and overall pleasure. Talking Books were rated higher than TV only for the function of providing intellectual stimulation. (See Figure 15 below.)

Figure 15

Staff Assessments of Television (TV), Radio, and Talking Books (TB) in Satisfying Selected Functions



Among those who doubted the utility of the program were staff who viewed the majority of residents in their nursing homes as "too old," "generally too confused," and "typically disinterested in activities." Staff commented that some intellectually competent people--who might otherwise read by listening--tended to "retreat from potential failure when up against the mechanical dexterity required" and were "unwilling to admit to loss of sight or physical capability."

Implications: Staff attitudes to Talking Books are generally poor. Outreach activities directed at institutional staff which emphasize both the value of reading generally and the rewards of Talking Books are suggested strongly.

Issue: WHAT ARE THE RESIDENTS' VIEWS ON AND INVOLVEMENT WITH THE NLS?

Findings: We did not find many resident-to-resident assistance programs, though occasionally a roommate assisted a user in exchange for the opportunity to "eavesdrop" on a mutually interesting selection. There was general confusion among both staff and residents as to whether it was "legal" for residents who might not be eligible for Talking Books to listen in. Lack of awareness that Talking Books are also for those persons who do not have the stamina or concentration to read for more than a few minutes at a time restricts personal and group use of the program. In general, residents who had exclusive use of NLS equipment as individual subscribers typically took their personal responsibility for obtaining and keeping track of materials from regional libraries quite seriously, even in institutions that had deposit collections.

We found some indication that too long a time elapsed between when the individual first noted serious difficulties in reading print and when information was provided about print alternatives. As a rule, the persons who were most devoted to reading with print alternatives had been introduced to them at home, prior to the development of conditions which necessitated their institutionalization. For other persons, who had stopped reading for fear of "using up" their vision, or had suddenly become one of the "frail elderly," dependent on staff assistance, the jump to reading by listening to Talking Books in an institutional setting is a difficult transition to make. It was unlikely that residents who do not have serious and obvious vision deficits would be offered Talking Books by staff.

On the whole, residents who used the program were complimentary about it. Their major suggestions were that: orientation to special reading services be expanded; more assistance be provided in operating the equipment and selecting materials; more short length items be made available; and that the NLS playback equipment be made lighter and more compact, simpler to operate, and have better tone.

Implications: With nationwide emphasis on developing more active roles for individuals in institutions, it might be appropriate to enlist residents to work with volunteers to identify potential readers, orient them to special reading materials and machines and even to develop more opportunities for sharing ideas on reading matter, since regional librarians may not always have time to perform these functions. We would expect that increased contact between the institutionalized residents and staff and the librarians would reap additional benefits for readers.

Issue: WHAT ARE THE MAIN REASONS FOR NON-USE OR DISCONTINUANCE OF THE NLS PROGRAM?

Findings: Of those institutions that are not currently using Talking Books or braille, 87% of the hospitals and 95% of the schools have never used the program.

Only 55% of the non-user long-term care facilities have never used the program. In our site visits, staff cited the high degree of resident turn-over--due to death in nursing homes, and to discharge in hospitals--as prime reasons for discontinuance of the program. The residents themselves offered a number of reasons for no longer using the program as well. Among them were: lack of interest in general, difficulties in machine operation, unavailability of staff assistance, inability to concentrate for long periods of time on books, and changes in health and/or mental status. Some residents did not request staff assistance, commenting that staff had "more important" or "more pressing" duties.

A number of organizational factors also affect termination of the program. High staff turnover of those charged with program responsibility has been a significant problem. There is also increasing regulatory pressure to expand group activities (i.e., bingo, group sings, parties, crafts), where the activities director plays a visible role and serves a large number of people. Talking Books, in contrast, are more typically used in smaller groups or by individuals; generally the activities director does not personally participate. Discontinuation of use seems to occur without much notice as other social group events take precedence.

Implications: Our impression is that the single most important determinant of an institution's termination of use of the NLS is the low priority given to reading and other individual recreational activities, given all of its other mandated responsibilities. Promotion by NLS of the use of Talking Books in group activities might encourage staff to include reading by listening, perhaps followed by a discussion group, as a regular planned activity.

Issue: WHAT PREFERENCES ARE THERE FOR TALKING BOOK MACHINES?

Findings: Record players are more prevalent in institutions with deposit collections than are cassette machines (84% compared to 59%). Although the proportion of institutions having record players is roughly the same across facility types, hospitals and schools are more likely to have cassette players (72% and 75% respectively) than are long-term care facilities (57%). Residents and staff did not always concur on which of the two machine types was preferable: staff preferred the longer playing cassettes, perhaps thinking in terms of their involvement as assistants. Older residents were generally more favorably disposed to record players, which are more familiar to them, especially when being introduced to the program. Record players were also preferred by users who read magazines, which are primarily available on flexible discs and which the individual is not required to return. Residents with multiple impairments generally reported that the record player was easier to operate. Pillow phones, headphones and remote control devices are in high demand but low availability (11%, 7% and 35% respectively).

Implications: There is consensus about the need for equipment designs which will facilitate more independent operation of the machines. Residents were primarily concerned that the equipment be easy to operate, and preferably automatic, while staff were more concerned that the equipment not require their assistance to be used, and that it be more compact, and thereby more easily transported between residents and more easily stored. This would seem to be a good basis for a human factors design effort.

Issue: WHAT INSTITUTIONAL FACTORS LIMIT THE AWARENESS AND USE OF THE NLS?

Findings:

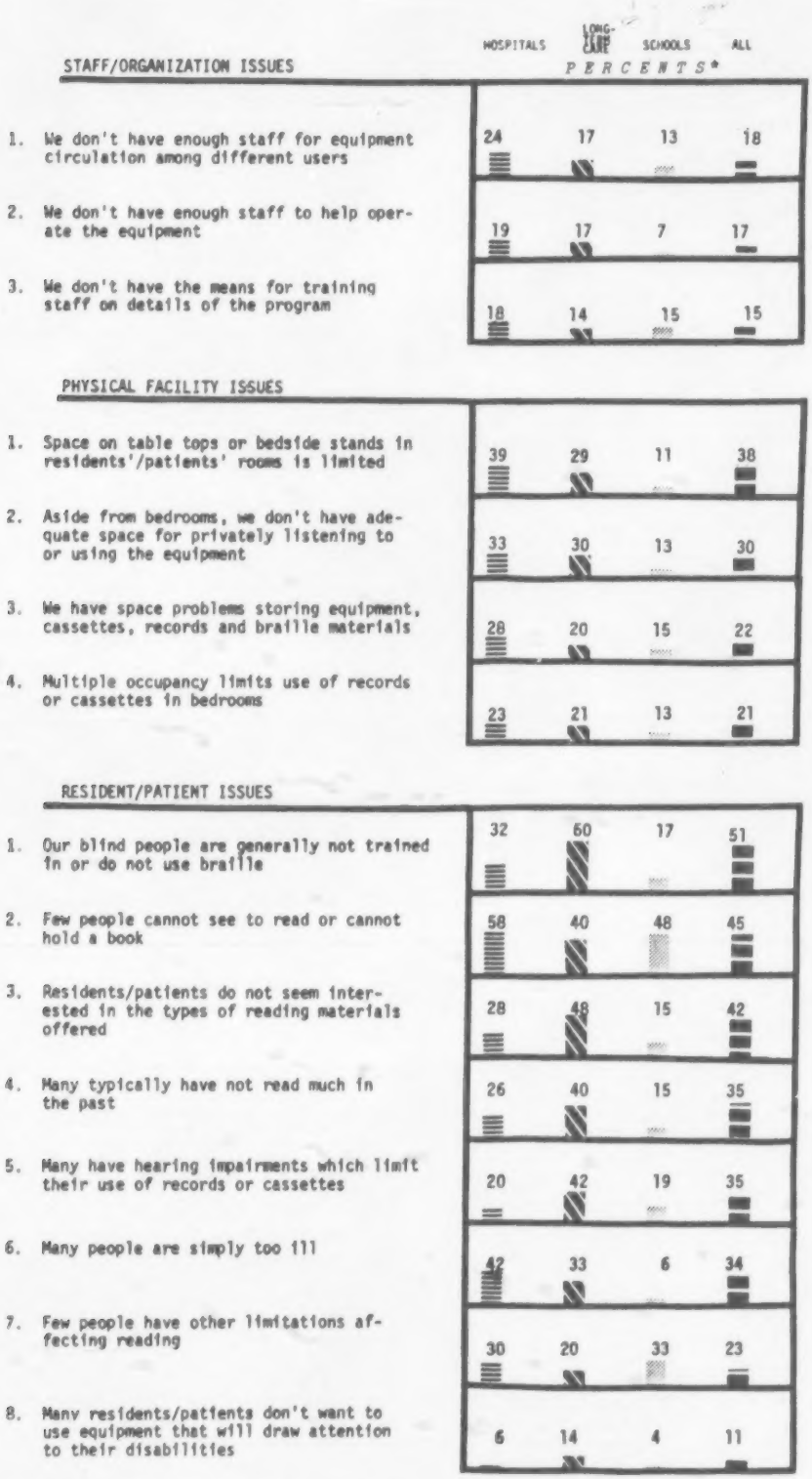
AVAILABILITY AND TRAINING OF STAFF--We have already noted that institutional staff charged with responsibilities for monitoring use of Talking Books are drawn to group activities and have little actual contact with residents who use the program. Conversely, for those staff who interact most often with residents in their rooms, training about Talking Books and more general activities programs is very limited. The education of nursing assistants on all aspects of care is minimal and training tends to be restricted to in-service training related to required services: nursing assistants typically have little knowledge of sensory function and the potential of the people they serve. This is a major drawback. Nursing assistants also tend to come from lower socio-economic groups than the residents and to have had only limited positive reading experiences themselves. In all types of institutions, volunteers have been underutilized and are not widely charged with any formal role in providing special reading services. In nursing homes in particular, volunteerism is minimal because of legal restrictions governing their use to provide services that should be the responsibility of trained staff. In some states, such limitations apply only to the "for-profit" institutions--two-thirds of which are health care residences, not hospitals or schools. (See Figure 16.)

FACILITY DESIGN--The unavailability of quiet, well lit, low glare places for listening to cassettes or records or reading large print is one of the greatest obstacles to increased use of print alternatives in institutions. Although 29% of all institutions report that there is a library or room specifically set aside for selecting and reading books and 61% have an area or lounge where print books are available, listening to recorded materials in public areas was not common. Residents may be discouraged from doing so because the sound of the recordings reduces the availability of public spaces for use by other residents, but we suspect that reading by listening is viewed as an unusual activity, and listeners do not wish to draw attention to their limitations. Consequently, recorded and braille materials are typically used in bedrooms (26% of the staff respondents report this as the only appropriate place to use them)--the majority of which are shared by one or more roommates. The architectural constraints of bedroom use were singled out by over a third of the respondents as limiting use of the NLS program. Use in bedrooms also places a burden on staff to distribute records and equipment. Though headphones are offered by regional libraries, only about one-third of the institutions with deposit collections have borrowed them and many individual subscribers are not aware of their availability. Still fewer institutions had remote control switches and pillow phones that facilitate bedroom use of the playback equipment (7% and 11%, respectively). The problem of locating suitable listening places is most severe in hospitals: many of these institutions do not have communal areas or lounges for patient use and often bedroom surfaces are limited to an overbed table necessary for eating and a bedside stand filled with accoutrements of medical care. Quiet listening time in all facilities is more readily available when health-oriented activities are completed--in the late afternoons and evenings. But at these times, staff levels are lower and less assistance is available.

SUPPLY OF MATERIALS AND MACHINES, MAINTENANCE FACILITIES--During the site visits, institutional staff often commented that equipment was scarce. This scarcity may contribute to the enforcement we observed of strict staff control over, and storage of, materials which results in increased resident dependency on staff for assistance, which in turn reduces demand. Concern for breakage and loss that might reflect badly on staff members assigned with the responsibility for the program, lack of information on how to have the equipment repaired and delays on repairs were also observed to contribute to limited use.

Figure 16

Staff Perceptions of Factors Involved in Non-Use of Talking Books and Braille By Type of Institution


HOSPITALS
LONG-TERM CARE
SCHOOLS
ALL
PERCENTS*
STAFF/ORGANIZATION ISSUES
1. We don't have enough staff for equipment circulation among different users
24 17 13 18
2. We don't have enough staff to help operate the equipment
19 17 7 17
3. We don't have the means for training staff on details of the program
18 14 15 15
PHYSICAL FACILITY ISSUES
1. Space on table tops or bedside stands in residents'/patients' rooms is limited
39 29 11 38
2. Aside from bedrooms, we don't have adequate space for privately listening to or using the equipment
33 30 13 30
3. We have space problems storing equipment, cassettes, records and braille materials
28 20 15 22
4. Multiple occupancy limits use of records or cassettes in bedrooms
23 21 13 21
RESIDENT/PATIENT ISSUES
1. Our blind people are generally not trained in or do not use braille
32 60 17 51
2. Few people cannot see to read or cannot hold a book
58 40 48 45
3. Residents/patients do not seem interested in the types of reading materials offered
28 48 15 42
4. Many typically have not read much in the past
26 40 15 35
5. Many have hearing impairments which limit their use of records or cassettes
20 42 19 35
6. Many people are simply too ill
42 33 6 34
7. Few people have other limitations affecting reading
30 20 33 23
8. Many residents/patients don't want to use equipment that will draw attention to their disabilities
6 14 4 11

*Percents are based on the total number of institutions making any comments; 438 hospitals, 1,126 health care residences and 54 schools, or a total of 1,618 institutions.

A particularly puzzling finding concerned the discrepancy between the supply and demand for materials. Often the quantity of materials on hand seemed to have little association with readership: it was not at all uncommon for institutions that had no machines to continue to receive materials--particularly magazines--more than a year after machines had been returned. The demand for recorded and braille materials did seem to be well met in schools for the blind and physically handicapped, although design of record and cassette players currently limits the utility of the machines made available by NLS for some of the multiply handicapped students, as it does for many of the elderly.

Implications: Three elements appear to be essential to the successful implementation of Talking Books in an institutional setting: 1) an organized system for all components of service delivery within the institution, 2) a "champion" or responsible and involved individual whether from within the institution or outside--the presence of an activities leader is not enough to ensure the appropriate referral to and use of special reading services; and 3) regular personal contact between NLS librarians and institutional staff who manage the program. We saw very few institutions that had more than one of these elements. Institutional staff often overlook the less life-threatening limitations, such as changes in vision or finger dexterity, and may not be as alert to changes in reading behavior as they should be. In the few instances where librarians were highly visible in institutions, all indications were that the service met the needs of a wider range of readers and more personalized attention was given than that typically provided by activities directors. Librarians from community libraries--who make regular institutional visitations--were also excellent sources of referral of potential readers, serving to alert staff to the particular needs of physically and visually handicapped individuals as well. We found those staff who had been visited by librarians to be appreciative of the personal attention and, in several instances, to have been inspired by the potential for upgrading the intellectual stimulation available to institutional residents.

An organized system might be developed outside of the institutional staff along the lines of the Telephone Pioneers. This would provide volunteers with opportunities to share their experiences with one another. Several of the more successful institutions using Talking Books were using a volunteer-operated reading service that included reading aloud, letter writing and print distribution, as well as management of the NLS program. Yet, most institutions lacked well developed systems for recruiting and training volunteers. Such systems might also involve the residents themselves or a combination of staff, residents and volunteers. Mutual aid programs would widen the social and intellectual potential of reading programs and capitalize on the experiences of the more alert and interested readers, as well as allow institutional staff to concentrate on the less able and less alert.

In the smaller nursing homes (those comprising the majority of institutions, especially of those identified as underserved), the program leadership may have to come from outside the institution itself. In some of the special schools, where reading and communication specialists were employed, there was still a felt need for contact with outside librarians.

Once the three essential elements are achieved, some other projects that might be undertaken, that have contributed to the success of the program in some institutions are: the preparation of packaged audio-visual orientation materials which not only include information on machine operation, but also offer examples of how to work with readers of varying interests and ability levels, and order materials appropriate for them; the arrangement for individual subscriptions for the more self-

sufficient; the creation of an organized network of readers; the formal training of all direct service (nursing assistant and housekeeping) staff as well as specialists (in activities, social services, occupational and physical therapy and reading teachers in schools); and the development of record-keeping systems on program use compatible with the paperwork already required by licensing and funding agencies.

Issue: WHAT IS THE POTENTIAL DEMAND FOR THE NLS PROGRAM?

Findings: On each site visit we asked staff whether they could systematically estimate the proportion of their residents who had serious limitations in reading or using regular print. A surprisingly consistent figure of 20-30 people per 100 residents was given. If residents who tire easily, after reading for a few minutes, were included the proportion would probably be higher. But even the potential of these residents (who do not have two or more chronic conditions making independent operation of the equipment impossible) to use Talking Books was quickly qualified with the information that it would be impossible for over half of them to use recording equipment without staff assistance, which is largely unavailable for this purpose. Overall, then, there are at least eight to ten institutional residents who might be eligible for Talking Books for each one who is presently reading by listening. This is about the same rate of potential use as that found in our study of U.S. households.

Implications: The special reading services offered by the NLS have the potential to increase the intellectual stimulation of perhaps a quarter of the individuals living in U.S. health care residences. The potential demand in hospitals is anticipated to be much lower at any given time, since the turnover rate of patients in hospitals is quite high (with average lengths of stay nationally of about one week). Hospitals do, however, serve a large number of people annually and hospital discharge services may be a source of referral for new readers who typically return to their homes.

OVERALL IMPLICATIONS

The overwhelming majority of obstacles impeding the use of NLS print alternatives were observed to be factors of institutional life and organization; unfortunately, many of these barriers are not particularly amenable to change by the local or regional libraries or the NLS. However, if the goal is to serve institutionalized persons who have limitations in reading regular print, it may be necessary to adapt elements of the NLS program to the special needs of institutions.

At present, many regional libraries have been working at gathering input from subscribers with an emphasis on bringing the physically handicapped and learning disabledinto an advisory role. Historically, the institutional population has had little say in planning and evaluating the various aspects of institutional life. Perhaps their voices can be included, at least in this one area, by allowing residents to meet with the network librarians in person to inform them of their specific reading interests and informational concerns. (We suggest personal contact rather than telephone contact because institutional residents are known to have limited access to the telephone.) The study findings also stress the benefits that might accrue from increased direct contact on the part of library staff with the people planning the full range of care options, and with the staff of the various existing institutions.

The estimates of the size of the potential institutional audience for the NLS, perhaps 275,000 non-print readers and a new 10,000 each year, are compelling in and of themselves. With the increases in life span projected for the future, there is still more evidence that institutional populations will require enhanced supportive services as we approach the 21st century. Our sense is that an economical alternative to communal living and care for most of those presently served in health care residences is not likely to be found. Though special reading services are unlikely to

change the overall nature of institutional care, they have the potential to dramatically alter both the intellectual climate of such facilities, and the mental well-being of institutional residents. Providing special reading services to institutions will not require **starting** something new, but it may involve reshaping and strengthening a service that is highly recognized, appreciated and needed. The challenge becomes one of fitting the library--an institution in its own right--into the context of the health care institutions, rather than expecting the health facilities to bear the major responsibility for achieving the organizational objectives of the libraries. The mutual goal of both systems should be to provide a continuity of services that will ensure the existence of reading opportunities for users of both conventional print and non-print materials, so that people may be equally well served as they go back and forth between community and institutional life.

ORGANIZATIONAL ISSUES BEARING ON THE PROVISION OF NLS SERVICES

In this section we focus on the organizational issues pertaining to the operation of the NLS program--that is, the patterned ways in which dispensers and recipients of NLS products and services interact, and the impact of these dynamics on NLS utilization rates.

Issue: WHAT IS THE EFFECT ON SERVICE PATTERNS AND UTILIZATION RATES OF THE PLACEMENT OF REGIONAL AND SUBREGIONAL LIBRARIES IN DIFFERENT ADMINISTRATIVE SETTINGS? WHAT IS THE IMPACT OF THE GROWTH OF SUBREGIONAL LIBRARIES?

Findings: The regional and subregional libraries generally fall administratively within the state library system, which is subsumed by the state department of education in most states (70% in our survey); but they may also be sponsored by the state department of culture, the secretary of state, or may report directly through a board to the governor or state legislature. Some regional libraries are administered by state divisions of blind services or are under a county or city library system. One regional library is sponsored by a private non-profit organization. In some instances, regional libraries sponsored by the state library system are modelled very closely after print collections; in other cases, the regional libraries describe themselves as little affected in policy or program by activities of the state library system. The rapid growth of subregional libraries is perhaps the most significant innovation in service in the last ten years. With this shift toward further decentralization, the state regional libraries often coordinate the local units and provide back-up support like quickly locating materials unavailable at a subregional library rather than direct services--even though most have little or no funding or managerial responsibility for them. In one state studied, although there are seven subregionals already affiliated with the regional library, there is a desire to establish more.

One of the strengths of the decentralization of authority and funding for the regional libraries has been to permit states to develop library services consistent wit local perspectives, needs and priorities. Indeed, one of our main findings is that the states have chosen unique methods and programs of distributing print alternatives. The diversity of methods appears to result in patterns of staffing and funding for the libraries that are not clearly related to sponsorship, population size or density, regional setting, or to relative interest in reading. Rather, these differences are often attributable to the organizational philosophy and the personality and philosophy of the state officials and the library director. We found that a consumer-allied rehabilitation orientation was more likely to bring about one kind of library response and a fiscal or administrative orientation was likely to result in a different one.

(In Volume 4 we take up the similarities and differences of the state libraries in detail and develop these into three major service models:Innovative; Traditional; and Transitional or Troubled.)

Implications: There seems to be no one ideal location of NLS libraries within state or local government. The problems of coordinating an expanding decentralized network require greater cooperation than ever before.

Issue: WHAT IS THE COMPARABILITY OF FUNDING AND STAFF INPUTS ACROSS STATES?

Findings: Regional and subregional libraries are funded by widely varying sources and national standards for funding do not exist. Comparative analyses of the sources of funding are complicated because in a number of states the origin of

monies is unclear. For example, the state library may apply for LSCA or CETA* grants that are added to the state library's general fund, a portion of which is then allocated for operating the braille and Talking Book program. There also is a lack of equivalence in staffing, a lack of comparability in the treatment of library rent payments, and usage of volunteers has not been taken into account.

Among the states studied, the annual outlay in FY1978 for network library services averaged about $4 per eligible person; the average ratio of eligible persons to paid full time equivalent library staff is roughly 2,500 to 1. There are wide fluctuations in these measures of resource inputs across the states. Dollar outlays per eligible person range from about $2 to $10, and client-staff ratios from about 500-5000 to 1, with relatively greater resources found in the small and moderately populated states, especially those with low population densities. The funding situation has improved markedly for some states in the last two years, but for others it has deteriorated. On account of limited budgets, volunteers are heavily relied upon in many libraries where state employment regulations do not restrict their involvement. The volunteers perform a great service but also bring with them all the problems of training and management, with few of the normal administrative controls over work productivity. Volunteers are involved in brailling, recording, repairing machines, visiting subscribers in their homes or institutions, and are assigned clerical tasks such as maintaining lists of readers or seeking special references. The number of volunteers used in each regional library varies from none to the equivalent of 10 full-time staff. No common system has been adopted as yet for reporting volunteer services and comparing task assignments. In some states, readers' advisors are in wide use, and select materials for heavy users of braille or recorded materials. In other states, they are being replaced by computerized systems for matching profiles of reading interests and available books. Another current staffing trend is the specialization of readers' advisors to work with school children (whose peak use occurs during non-school summer months), with the elderly (whose peak use occurs in winter), and with institutionalized readers.

Implications: Systems for accurately reporting in a common format would facilitate comparisons of funding and staff inputs and would help to clarify the real level or resources committed by local and state governments. Common standards for automation might help also to document the trade-offs between greater streamlining and privacy, versus depersonalization.

Issue: HOW DO THE SETS OF SERVICES OFFERED BY THE REGIONAL LIBRARIES DIFFER FROM ONE ANOTHER?

Findings: On many issues the distributing libraries act as autonomous units, offering special services where they see a need for them. In addition to disseminating recorded and braille materials supplied by the NLS, 100% of the libraries surveyed offer reader advisory services, 87% have volunteer recording services, 81% provide information and referral/reference services, 75% transcribe and distribute braille materials, 62% provide and distribute large print, 56% have toll free telephone services, 56% have machine maintenance and repair services, 50% have automated ordering equipment, and 25% accept collect telephone calls from subscribers. A few libraries operate radio reading services in which books and magazines are read over the radio to subscribers.

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*Library Services and Construction Act (LSCA) in the Department of Health, Education and Welfare; Comprehensive Employment and Training Act (CETA) in the Department of Labor.

In addition, a variety of reader services are often available within a particular state, but are not coordinated by that state's regional library. Braille readers, for example, may have to correspond directly with another state's regional library to acquire materials. Machine distribution and repair, which is an issue of concern and frustration for many librarians, may be handled by staff or volunteers who have formal ties to the library but are affiliated with an organization for the blind.

Readership and circulation data for the regional libraries included in this study show that some states have many more avid readers than others, that some states appear to be converting from Talking Books on records to Talking Books on cassettes much more rapidly than others, and that some states have a much more active deposit collection readership than others. In the 16 states studied "total circulation" ranges from five to twenty times estimated readership.

Implications: Adoption of standards for service such as those proposed by the ALA (1979) may help to make the distribution of NLS services across the country more equitable.

Issue: WHAT ARE THE MAIN ADMINISTRATIVE CHARACTERISTICS AND CONCERNS OF REGIONAL LIBRARIANS?

Findings: Relatively few regional librarians appear to be actively involved in negotiating budgets for the units that they manage or coordinate. Some regional library directors appear to have no input into budget preparation at all, and merely account for expenditures. More typically they prepare estimates of staff salaries and costs of services needed, and submit these annually to the state or public library system of which they are a part; but the budget is often handed down without appearance and/or testimony of the regional librarian before the sponsor's funding body. Not unexpectedly, the librarians with the greatest budget authority appear to offer the greatest range of programs.

Nearly half (43%) of the regional librarians describe the financial outlook for the next three to five years as inadequate. This group is facing shortages, particularly in staffing, which force them to concentrate their resources on meeting current demands. However, the other half of the librarians (57%) characterize their budgets as having increased recently to levels capable of supporting innovations and expansion.

The administrative levels from which regional library directors dispatch their responsibilities vary, frequently as a function of the state agency sponsoring the library. In some cases the director is on the same level as that of the chief of a city public library, in others he/she reports to the head of a public library. Consequently, it may be expected that the salaries and qualifications vary. As an interesting aside, we found that the majority of directors (75%) are women.

Long range plans that reflect current trends appear to be largely absent today from the regional libraries, though some of the regional librarians identified a number of projects in planning for implementation in the immediate future. About a third (38%) are searching for facilities that will handle growing collections of material (expecially space-consuming braille volumes) or will house

expanded staff and volunteer services. Nearly a third (31%) are interested in expanding their local or state capability to record and duplicate taped materials. A fourth are developing or expanding outreach programs. Nearly a fifth (19%) have identified a particular target audience that they wish to serve better (Spanish speaking, institutional, elderly). About 13% are seeking staff and financial support necessary to provide what they feel are minimally acceptable levels of service.

A common theme of the librarians about the adequacy of library facilities and their location was that a better fit between the priority activities of the library and its facilities will improve organization, and result in more varied and effective services. Only a quarter of the libraries surveyed were housed in free standing, single occupant facilities; more than half were housed in a public or state library. For over one-third of the libraries, the present service priorities were to develop facilities they need but do not yet have. To illustrate, nearly all of the regional libraries studied permit readers to use their facilities on the premises (walk-in use) but only one half have a reading room.

Implications: The adoption of the 1979 American Library Association standards of service for the Library of Congress Network of Libraries for the Blind and Physically Handicapped would adequately address a number of the observed gaps and concerns. Decisions aimed at improving administration must be gauged in terms of their effects on the subscriber. To illustrate, the accessibility to staff and volunteers, adequate access for trucks, space for sorting, holding and distributing materials and machines, space for volunteers and recording must be gauged against development of facilities architectually accessible to and designed for use by handicapped subscribers (e.g., wheel chair and cane users), and their proximity to population centers and public transportation.

Issue: WHAT ARE THE PRIMARY ISSUES RELATED TO REACHING NEW SUBSCRIBERS?

Finding: Though librarians are generally aware that the largest body of their current and potential subscribers have multiple reading limitations, they typically categorize subscribers into groups of readers who have different programmatic needs depending on their primary limitation, age and living situation. The user groups are respectively: visually impaired--those who have problems seeing, physically handicapped--those who have problems holding a book or turning pages, or become easily fatigued; and learning disabled--those who have problems in perception, memory and understanding; school-age children--those who have educational needs; and elderly--those for whom social isolation, mobility and general health may be additional concerns; non-English readers--those for whom most available reading materials are not satisfactory; and finally, persons living in health care facilities--those who have special health problems that require regular supervision and management beyond the individual's personal capacity.

The special concerns of reaching new readers in each user group and of expanding their utilization of the NLS program fall into three broad areas: a) historical image of the NLS/BPH service; b) eligibility and certification procedures for each of the user groups; c) developing outreach activities to promote the library program to user groups.

Historical Image: The national library program was first developed some forty years ago to serve ligally blind people. The general public, including many persons with print limitations, often continues to associate NLS services with the blind. This image hinders the expansion of readership to qualified physically handicapped, learning disabled, low vision and elderly persons. In addition, many persons who have vision problems are frightened by the term "blind," and consequently do not seek services offered to blind people. The extension of services to the physically handicapped presents a special challenge, even now, fourteen years after NLS services were extended (in 1966) to this group. This can be particularly complicated for librarians housed within or receiving funds from a state agency for the blind.

One possible reason for the difficulty in expanding readership among the physically handicapped and learning disabled is that no single organization acts as a conduit for information or provides services or advocacy on a state-wide basis. Regional librarians interviewed commented that for many of these disability groups reading seems to have a lower priority than, for example, the elimination of architectural and employment barriers.

Eligibility Requirements: The eligibility stipulations for the services offered by NLS include persons, certified by a "competent authority," who are unable or have severe difficulty in reading regular print on account of visual limitations, physical limitations, and/or reading limitations resulting from "organic dysfunctions."

For physical and visual limitations, a competent authority may be a doctor of medicine, an ophthalmologist, an optometrist, a registered nurse, a therapist, a professional staff member of an institution, a social service agent, or a professional librarian. For both of these classes of limitations, the cause of the reading disability can usually be detected without a clinical examination. The case of reading limitations stemming from organic dysfunctions, however, is somewhat different. Here, a "competent authority" is defined as a doctor of medicine who may consult with colleagues in associated disciplines. The certification of persons having reading limitations resulting from organic dysfunctions (such as dyslexia, mental retardation or other learning disabilities) was reported by librarians to pose major problems due to the fact that many of these disorders are not readily detected by observation, nor is their origin. If an individual has a learning limitation with an unambiguous physiological basis, such as brain damage at birth, then he/she is entitled to use the NLS program under PL89-522. But if an individual's limitation is taken to be emotionally-based, as some forms of schizophrenia are, he/she is disqualified. But it appears that the present practice of denying eligibility to some persons with learning limitations while extending it to others is unsatisfactory on two counts: first, because the identification of a problem as emotionally- or physically-based is not at all clear-cut; and second, because the current state of scientific knowledge about the basis of many learning problems which now fall under the category of "emotional" problems is so scanty that our present definitions of "emotional" problems versus "physiological" problems may well be modified or supplanted with further discoveries. Additionally, psychologists and others who do much of the diagnosis and treatment of persons with learning limitations are not currently recognized as "competent authorities" by NLS.

Certification is made with some rigor although states vary somewhat in this, as might be expected where definitions of eligibility are open to interpretation, and where there is no single adjudication body. For institutional deposit collections in health organizations, there is much less rigor in applying the eligibility requirements than for individuals, since certification of readers in nursing homes is typically accepted from activities or nursing staff rather than from a medical doctor.

Outreach: Responding to the reading needs of persons residing in health care institutions is becoming a higher priority in many states as a result of a growing awareness of the preponderance of older persons among subscribers to the regional libraries, and because of recent efforts to improve the general care of the elderly. This reordering of priorities has presented many difficulties and controversies for the regional librarians, such as an increasing uneasiness over the lack of personal contact they have with the residents themselves, and the lack of control over the provision of services in these facilities. A number of regional librarians objected to the procedure of some staff of screening items before nursing home residents can read them, or of using the Talking Book machine as a reward for satisfactory behavior patterns. Librarians also say that they must continually "sell" their services to activities or social service staffs rather than wait to be contacted by the nursing homes.

To deal with these problems, some librarians have developed highly structured orientation programs for nursing home administrators and staff. Sometimes these include training nurses aides and volunteers how to operate the equipment and to select reading materials. A few librarians have visited nursing homes themselves to learn about both residents and staff, to reduce wariness in these homes about accepting yet another federal/state program, and to train eligible residents how to operate the recording machines, and a few are trying to exert more control and provide improved services by encouraging individual subscription in nursing homes. But costs of personalized services are a key barrier to services in nursing homes and health care institutions. Budgets have often not been planned to cover the cost of extensive outreach services necessary to cultivate institutional populations.

Similar problems to those identified in expanding outreach to nursing homes and hospitals were found for schools. Historically, many children with reading handicaps have been easily identified and serviced because they attended special schools for the blind or handicapped. But in recent years, with mainstreaming of handicapped children into local public schools, it has been more difficult to reach and assist these students. There has not been a widespread effort to meet this challenge.

Implications: The development of innovative methods of outreach to extend services to new subscribers is complicated, time-consuming and costly. One means of circumventing the problem that the NLS has begun to explore is the circulation of its bimonthly publication, News, to the various regional libraries and other concerned persons and groups in the field. We encourage the NLS to gather and disseminate more information from the libraries themselves as well, to achieve a flow of information from one library to another. Information about outreach approaches that have been successful for some regional libraries should be accessible to the others.

Issue: WHAT IMPROVEMENTS ARE DESIRABLE IN SERVICES FOR EXISTING SUBSCRIBERS?

Findings: Regional librarians identified six issues related to improving existing services to subscribers as a means of expanding utilization of the program: 1) selection of materials appropriate to subscriber preferences and capabilities, especially more adult materials at an 8th grade reading level, shorter materials and materials utilizing more than one voice; 2) simplified equipment designs which incorporate necessary human factor considerations, e.g., for dexterity and hearing limitations and extended listening; 3) improved mechanisms by which readers learn about available book and magazine titles; 4) timely delivery of NLS materials; 5) mechanisms to ensure that the materials and equipment are being properly utilized by subscribers; and 6) the establishment of mechanisms of formal input from subscribers and organizations of and for the user groups. For each of these issues the regional librarians noted that consideration should be given to the special needs of each of the subscriber groups discussed in the last section. For the most part, recommendations of the librarians paralleled those of the subscribers previously presented. For example, despite recent NLS surveys on consumer satisfaction with four track players and a positive Canadian experience with cassettes, the conversion from records to cassettes greatly concerns many regional librarians. The main problem seems to be overcoming the resistance of the elderly and physically handicapped to cassette players, which for many are more confusing and mechanically more difficult to operate than the record players. Two, the current record players themselves are judged to be large and awkward machines, and while relatively reliable, have poor tone quality--especially for extended listening and enjoyment. The need for training in the operation of these units was also underscored. Accessory devices like headsets, pillow phones, and remote control devices supplied by NLS were generally felt to be too often unavailable and of inferior quality.

The experiences of a few regional libraries with very active input from subscribers show that widely representative consumer panels may be an unexplored mechanism of reaching new readers and gaining insights into problem areas. Nearly half of the regional librarians interviewed have some formal mechanism by which readers may regularly influence the delivery of services, but often this is a consumer advisory board that predominantly includes advocates or professionals rather than subscribers. Blind persons are notably more prevalent as consumer representatives than persons with other types of limitations. Typically, committees react to information on new library services and procedures, although some participate in formulating policies, setting priorities and planning budgets. In other instances, the formation of an advisory panel around the issue of radio reading services involved members in a number of broad issues and resulted in the recruitment of volunteers. But some regional librarians wonder whether consumers might have more effective impact directly on subregional or public libraries. There is also some feeling that even without formal panels, adequate input and feedback are received through informal sources, such as articles written for newsletters or telephone calls.

Implications: There is a relatively good consensus between librarians and their subscribers about many issues that need improvement and the specific improvements required. The task is now to find the resources and the energies and to apply them.

CONCLUSION

As seen in the current library literature, librarians have become increasingly concerned in the past ten years with justifying the importance of their services to those who use and are responsible for funding them. Librarians of libraries for the print handicapped are no exception.

Despite the increasing number of public and special libraries for the general public, the role of libraries in meeting the needs of Americans for recreational reading and timely information seems gradually to be being taken over by other sources of reading materials related to more convenient, personal ownership (i.e., the inexpensive paperback book, book clubs, magazine subscriptions, newspapers and computerized information services). At the same time, there has been a shift from reading in the home to family life around the television set. A pattern of reduced readership of daily newspapers among persons under 35 years of age now seems to be spreading to other age groups.

Happily, libraries serving persons with print limitations are now more active than ever. So, too, are the other providers of alternatives to regular print. Thus, the increasing needs of this special population for reading materials are being satisfied more fully than they have ever been before. This is true despite our findings that only slightly more than half (57%) of the 2.64 million persons in the household population potentially eligible to use the NLS program are aware of it, and only about 11% actually use the program. The NLS subscribers, we have shown, are a very special segment of the entire target population. They are for the most part better educated, legally blind, young, white and unaffected by the compounding limitations in hearing, general health and mobility that typically affect the target population. Considerable potential exists, then, for expanding the awareness and utilization of the NLS program.

This study itself is evidence that the National Library Service is concerned with developing directions for the future and is using one of the organizational means available to it to research issues and perhaps reevaluate its current position on these issues.

As with the libraries for sighted persons, there is an ongoing need to keep abreast of the times so as to continue to meet the growing needs of this special population, and to ensure their continued vitality in American society. One organizational issue that may bear on the continued use of the NLS is the decision that NLS central and the network of 159 regional and subregional libraries make as to whether to continue to fund their present programs or to expand their present services to include large type materials, materials for persons with learning disabilities and more employment- and educationally-oriented activities. One result of opting for the latter course might be an expanded availability of informational reading materials prepared with government funds. This issue is a particularly important one, because, unfortunately, there has not been the burgeoning of information services for the population with print limitations, especially the professionals among them, that there has been for the sighted population. Nor has there been

a comparable growth in the number of places to obtain print alternatives quickly and easily. We see the broad promotion of expanded information and referral systems at no cost to the user, as one of the key means that the NLS might adopt to increase readership. Better information on services and entitlements is regularly shown to be one of the primary coping needs of disabled persons in needs assessment studies.

Another consequence of a decision to expand the orientation of the National Library Service to encompass not just reading activities but other rehabilitation activities as well, should the Congress make such a decision through a change of legislative mandate and increased funding, might be the extension of services to all persons with learning disabilities, irrespective of the identified origin of the limitation. Still another might be the redesign of NLS cassette players so that they could be used for recording purposes as well as playback, or so that they include SCA radio receivers now employed by radio reading services, which provide special programming to persons with print limitations. Given its present mandate, decisions made at the level of the National Library Service itself might expedite the development of paperless braille, more compact and more easily operated high fidelity playback equipment, a greater availability of timely braille and recorded titles, and, as noted above, enhanced and more accessible information and referral services. Expanded paid library and volunteer staffs are fundamental to performing the demanding and complex task of reaching new subscribers. We did not find any panaceas to the problem of increasing awareness and utilization of the program in the target population. Television spots will help some, but better ties should also be made to medical and optometric professionals, to rehabilitation staff and to consumer advocacy groups. The situation in health care institutions tends to be still more problematic because the primary objectives and the physical environment of such institutions tend not to be conducive to the use of Talking Books. The declining use of braille among legally blind school children gives us reason to worry about the future of braille; the data suggest that a broad-based research program on braille should be encouraged and funded at more significant levels. As one of the major purchasers of braille, it behooves the NLS to take the lead here. Innovative programs in each of these areas could help to increase still further the already increasing use of the National Library Service.

Coincident to the time this study was being conducted, the American Library Association (ALA) was undertaking the preparation of new guidelines for operation of the regional library program. It was reassuring to us that our work, conducted independently of the ALA's, touched on many of the same points as their guidelines. This study may therefore serve to underscore the overall need for guidelines, and reinforce or suggest modifications of specific ALA recommendations. The findings may also be useful as an indication of problems identified prior to the implementation of the guidelines--that is, as a statement of views at one point in time, against which later developments can be gauged.

Finally, this report reflects the interest of the library network in assessing itself, in order to explore how readership can be expanded and more adequately served. It became apparent during the various surveys that the service delivery concerns of one state had often been effectively resolved in other states, but that the solutions were not generally known or widely used. Therefore, some of the material presented here has been with an eye to providing some feedback to the network which, hopefully, will be of use to audiences at the federal, state and local levels. Many of the issues identified here lie within the purview of the federal mandate and authority; other issues fall within the state li-

brarians' domain. However, most factors represent multiple policy level decisions. In this context, the findings strongly suggest the interest in and need for increased coordination, cooperation and communication among providers of materials and equipment at the national level, and among the directors of state offices of education, state library systems, state commissions and other administrative departments, who also determine the quality and extent of reading opportunities for persons with print limitations.

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